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Overcoming access and equity problems relating to primary health care services in rural and remote Australia

Centre of Research Excellence in Rural and Remote Primary Health Care

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Medicine, Nursing and Health Sciences



Broken Hill University
Department of Rural Health



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LIST OF ACRONYMS

ABS	Australian Bureau of Statistics
ACCHS	Aboriginal Community Controlled Health Services
AIHW	Australian Institute of Health and Welfare
AMSANT	Aboriginal Medical Services Alliance of the Northern Territory
APHCRI	Australian Primary Health Care Research Institute
ARC	Australian Research Council
ARIA	Accessibility/Remoteness Index of Australia
ASGC	Australia Standard Geographical Classification
CHS	Community Health Services
CIs	Chief Investigators
CRE	Centre of Research Excellence
CRERRPHC	Centre of Research Excellence in Rural and Remote Primary Health Care
CRH	Centre for Remote Health
DoH	Department of Health
GIS	Geographical information system
HCRRA	Health Consumers of Rural and Remote Australia Inc.
HR	Human Resources
IFA	Improvement Foundation Australia
IM/IT	Information management information technology
LOS	Length of service
MPS	Multi-Purpose Health Services
NAC	National Advisory Committee
NMDS	National minimum data set
PC	Primary Care
PHC	Primary health care
PHCRED	Primary Health Care Research Evaluation and Development
RRMA	Rural, Remote and Metropolitan Areas classification

CONTENTS

Section 1 - Introduction	6
Background.....	6
Aims of the CRERRPHC	7
• Stream 1: the geography of access.....	7
• Stream 2: the impact of rural and remote context on primary health care practice ..	7
• Stream 3: evaluating sustainable PHC service models	7
Conceptual basis and rationale	8
Section 2 - Methods	10
Organisational arrangements for the CRERRPHC	10
Governance, leadership and management.....	11
Academic leadership	11
Project Manager.....	12
Chief investigator meetings	12
Research Stream meetings	12
Linkage with end-users	13
Role of the Advisory Committee	13
Governments and bureaucrats	13
APHCRI.....	13
Health services, professional organisations and consumers.....	13
Academic research & knowledge generation methods	14
Stream 1.....	14
Stream 2.....	15
Stream 3.....	15
Capacity building.....	15
(i) Internal – ‘Growing PhD and Post-Doctoral Researchers’.....	16
(ii) External – ‘Building research skills of rural health practitioners’	16
Knowledge transfer	17
Dissemination of research outcomes – Website and Newsletters	17
Tracking knowledge impact and uptake.....	17
Knowledge translation strategies	17
Section 3 – Results	19
Knowledge generation.....	19
Stream 1: the geography of access and equity:.....	19
Stream 2: Benchmarking the impact of rural and remote context on primary care practice:.....	20
Stream 3: Primary health care models:.....	21
Capacity building.....	26
Internal program.....	26
External program:.....	27
Knowledge transfer	27
Research dissemination – Newsletters and Website:	28
Conceptualising a research impact framework:	28
Constructing an impact monitoring database:.....	28
Case-study of research into policy – The ‘Modified Monash Model’:.....	30
Section 4 - Discussion and policy implications	32
Policy implications – Research Streams.....	32

Stream 1.....	32
Stream 2.....	32
Stream 3.....	33
Policy implications – Research capacity building.....	33
Section 5 - Conclusion.....	35
References.....	36
Appendices.....	38
APPENDIX 1: National Advisory Group – Terms of Reference and membership	38
APPENDIX 2: List of stakeholder meetings and presentations, including Reference Group and round-tables	40
2014.....	40
2013.....	41
2012.....	42
2011	42
APPENDIX 3: Evaluation feedback from presentations	43
APPENDIX 4: Final survey – Health Care Access.....	47
APPENDIX 5: Benchmarking survey instrument.....	51
APPENDIX 6: List of conference presentations	54
2014.....	54
2013.....	55
2012.....	57
2011	57
APPENDIX 7: List of peer-reviewed publications.....	59
CRERRPHC journal articles submitted for review.....	59
CRERRPHC journal articles in press.....	59
Recent CRERRPHC published journal articles accepted in 2014 and published early in 2015:.....	59
2014	60
2013.....	61
2012.....	62
2011	64
APPENDIX 8: Website details and frontispiece	65
APPENDIX 9: Newsletters.....	66

Section 1 - Introduction

BACKGROUND

Nowhere is the problem of access to health services greater than in rural and remote areas.¹ *“Lack of access to quality healthcare providers is one of the primary root causes of health inequity and is disproportionately experienced by people living in remote and rural communities”.*² While poor access and social inequity are not confined to non-metropolitan areas, for geographically large countries such as Australia and Canada, this problem translates into major inequities in resource distribution and service provision in rural and remote areas, with consequent unacceptable inequalities in the health and well-being of their populations.^{3, 4} For example, rural and remote Australians have poorer health outcomes, die sooner than people living in urban areas, and Medicare has a \$1 billion underspend on people in rural and remote areas. Not only are problems of access to services at the heart of health outcome inequalities and inequities, but importantly they have persisted over time,⁵⁻⁶ and remain the single biggest impediment to improving the health outcomes of geographically disadvantaged groups of the population.⁷

The Centre of Research Excellence in Rural and Remote Primary Health Care (CRERRPHC) was launched in 2011 at Parliament House in Canberra by the Honourable Mr Mark Butler, the Minister for Mental Health and Ageing (see Figure 1). The CRERRPHC was established to undertake research on access and equity issues in relation to rural and remote primary health care (PHC). This focus is premised on the following:

- > The inequality of health outcomes between the one-third of Australia's population living in rural and remote regions and their metropolitan counterparts is unacceptable;⁸
- > The acute compounding effect of geography on socio-economic disadvantage in rural and remote areas;⁹
- > Evidence that effective PHC services diminish problems of workforce recruitment and retention;¹⁰⁻¹¹
- > Evidence that PHC services are the most efficient and effective vehicle for improving health outcomes;¹² and
- > A logic model that provides the explanatory associations between health service inputs in specific contexts, service outputs and health outcomes.¹³



Figure 1: Launch of the CRERRPHC 2011 - L to-R: Professor David Lyle (CI), Professor John Humphreys (CI), Hon. Mr Mark Butler (Minister for Mental Health and Ageing), Professor Lesley Barclay (Chair, National Rural Health Alliance) & Mr Gordon Gregory (CEO, National Rural Health Alliance).

AIMS OF THE CRERRPHC

The research program of the CRERRPHC aimed to better understand key access and equity issues relating to the provision of appropriate, effective and high quality primary health care services in rural and remote communities of Australia. The integrated research program comprised three broad streams of research activity:

- **Stream 1: the geography of access**

Arguably one of the most important aspects of equity and access to PHC services is the location and distance to these vital resources. Stream 1 research aimed first to assess differential access to PHC services and service utilisation on a national level, using sophisticated geo-spatial methodologies; and, secondly, to produce evidence and generate an improved measure of access to inform national PHC workforce planning and evaluation necessary to ensure citizens have an equal opportunity to be healthy.

- **Stream 2: the impact of rural and remote context on primary health care practice**

Far from being provided ubiquitously, the availability of PHC in rural and remote areas relates very closely to the context in which services are provided and the nature of activity that PHC workers do. Different models of provision are required to take account of differences in population size and density, location, and needs. Unfortunately, a major gap limiting current health reform initiatives designed to increase equity of access to health care is lack of knowledge about what mix of PHC services communities of different sizes and locations require (and could reasonably expect) in order to maximise quality health outcomes. Ensuring equity of access requires a good understanding of the service requirements in terms of funding, infrastructure and human resources.

Stream 2 research aimed to collect primary data from high-performing PHC services operating in different rural and remote contexts to identify indicators and develop 'benchmarks' for key service requirements (such as workforce and funding) and service performance (for example, early intervention, treatment of acute and chronic disease) that can be used to quantify the volume and distribution of available care (that is 'who gets how much of what services').

- **Stream 3: evaluating sustainable PHC service models**

Research has shown how a "one-coat-fits-all" model of health care fails many rural and remote Australians. The aim of Stream 3 research was to evaluate innovative PHC services which fill service gaps, better target health needs and promote workforce recruitment. This research aimed to highlight PHC models that minimise barriers (such as distance and affordability) and maximise access to optimal care in different contexts, particularly focusing on aged care, mental and Indigenous health. Building on previous research, the CRERRPHC sought to apply generic environmental enablers and essential service requirements to differing contexts in order to identify 'what models work best where and why'.¹⁰⁻¹¹

In short, the CRERRPHC research program sought to provide a national platform showing how improved access to appropriate PHC services for populations in locations with poorest access will increase equity in health care through improved health literacy, service utilisation and health outcomes.

CONCEPTUAL BASIS AND RATIONALE

Penchansky & Thomas's landmark paper¹⁵ captures the multidimensional concept of accessibility – incorporating availability, accommodation, affordability and acceptability.^{1,14} This concept of accessibility is operationalised within a logic model framework that underpins the CRERRPHC research program (Figure 1). Previous research (shown in stipple) has empirically validated the relevance of this framework through developing (i) a typology of PHC service models appropriate in different rural and remote contexts; (ii) a framework that defines the environmental enablers and essential health service requirements across these different models; and (iii) indicators and benchmarks specifically for workforce retention.^{10-11, 16-19} This research has received national and international acclaim by academics and policymakers through its explanation of the context of, and inputs to, effective and sustainable PHC services.

The research investigated in detail how appropriate and sustained PHC service inputs contribute to direct and indirect health outcomes that ensure improved health status for all Australians (see shaded area in Figure 2). The CRERRPHC research helps to generate measures by which to link PHC models with improved efficiency, acceptability and appropriateness of care necessary to ensure sustainable improved health outcomes. Specific studies focused on sustainable models of aged care and mental health service delivery (two of the most important national priority areas relevant to under-served populations), and the role and importance of health knowledge and literacy in improving access to PHC.

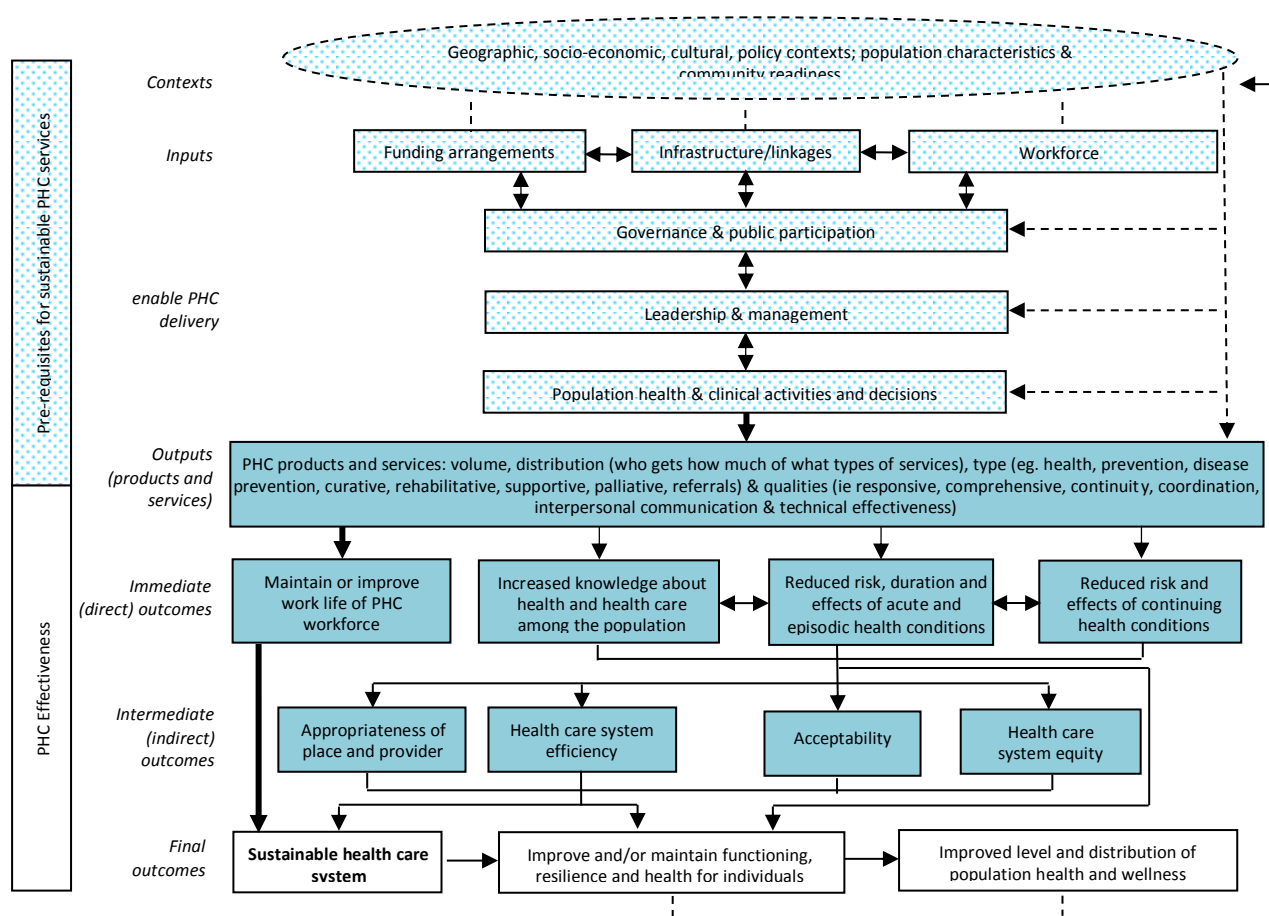


Figure 2: An evidence-based logic model for primary health care for small rural and remote communities

(After: Watson et al., 2009.)

The research demonstrates how geographical disadvantage (felt most acutely in rural and remote areas) exacerbates the effects of social determinants on health and organisational problems that contribute to poor health outcomes. Importantly, too, it highlights the urgent and critical need for, and importance of, sentinel measures by which to monitor the impact of improved access to appropriate PHC on health behaviour and health outcomes. Geographic-based indicators and benchmarks are essential for monitoring the provision of PHC services^{13,20} and evaluating national policies designed to provide effective and equitable health care to all Australians regardless of their place of residence.

Section 2 - Methods

The CRERRPHC research program combined Australia's best rural and remote health researchers across four sites with pre-eminent early career researchers, post-doctoral research fellows and PhD students, and international experts from North America. The CRERRPHC comprised staff from departments across four universities (Figure 2):

- > Monash University School of Rural Health in Bendigo
- > Monash University Graduate Medical School, Churchill
- > Centre for Remote Health, a joint Centre of Flinders & Charles Darwin Universities, Alice Springs
- > The Broken Hill University Department of Rural Health (University of Sydney)

Associate investigators from Macquarie University, the Northern Territory Department of Health, and overseas provided invaluable input to the research program.

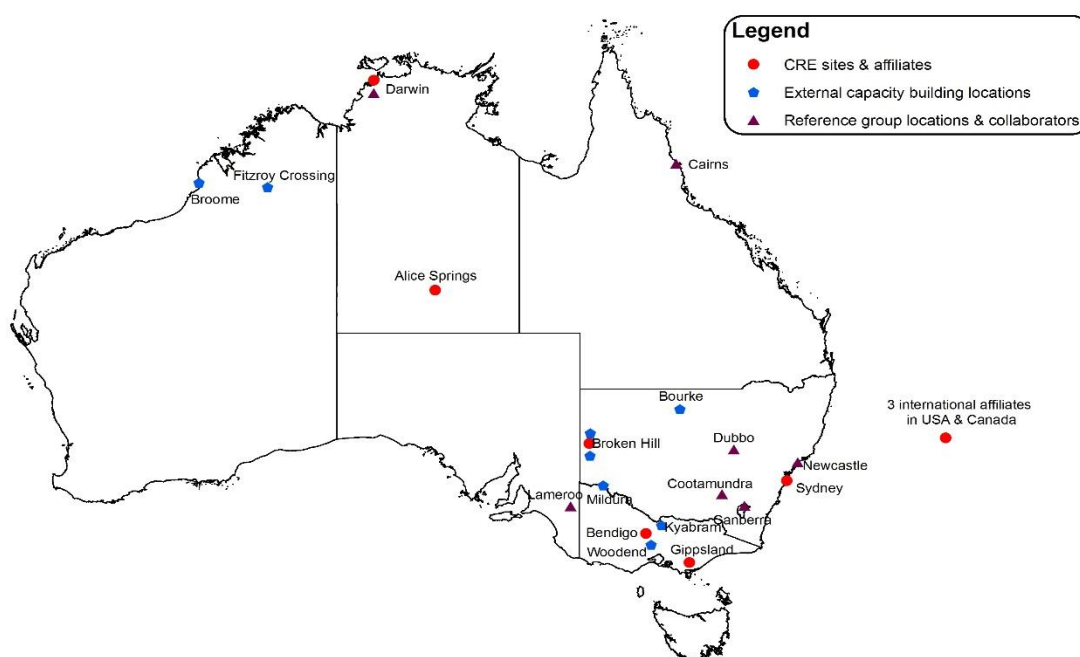


Figure 3: Location of CRERRPHC sites in Australia

ORGANISATIONAL ARRANGEMENTS FOR THE CRERRPHC

Strong leadership, efficient management and administration, minimal bureaucracy, effective and transparent communication, and collaborative decision-making are key to any successful and sustainable organisation. With this in mind, the CRERRPHC spent some time initially in putting into place good governance and management measures, together with strong and efficient organisational arrangements, to complement the strong academic leadership:

Governance, leadership and management

The management of the CRERRPHC was maintained through a Management Committee comprising the Chief Investigators (CIs), and was chaired by CIs Humphreys and Wakerman who took overall responsibility for the effective operations of the CRERRPHC. Face-to-face meetings of CIs were held from the outset to put into place necessary strategic planning and agreements. In addition, to ensure efficient organisational arrangements and that academic programs were on track, annual face-to-face meetings were supplemented by fortnightly meetings of the CIs held by teleconference. These regular meetings and communication maintained the success of the collaboration and enabled the successful completion of joint projects, as well as training and supervision for research students across institutions. In addition to the central management and operational functioning of the CRERRPHC, individual roles were assigned to CIs in order to ensure the efficient and effective functioning at each of its nodes.

Academic leadership

Just as with any successful organisation, strong academic leadership was required to ensure that the CRERRPHC met its goals. Individual CIs shouldered this responsibility.

- > CI McGrail and CI Humphreys co-led the Stream 1 '*Mapping access to PHC and service utilisation*' project;
- > CI Wakerman led the Stream 2 '*Developing an appropriate PHC evaluation framework for service access and equity*' project;
- > CI Lyle took responsibility for researcher capacity building activity, particularly with higher research degree students, and co-led the Stream 3 '*Developing and evaluating sustainable PHC service models to improve access*' project with CI Perkins.

Staff of the Poche Centre for Indigenous Health in Alice Springs (Flinders University) contributed to the research program, but the original intention of the Poche Centre taking leadership of the Indigenous health literacy and health services research was not fully realised for reasons beyond the control of the CRERRPHC.

Fortnightly academic teleconferences were held to review academic progress across the CRERRPHC research program, and these were complemented by annual face-to-face gatherings and presentations. In addition, there were regular teleconferences of individual CIs and researchers at various stages of the projects.



Figure 3: CRERRPHC team - Back (L-R): Melissa Lindeman, Steven Guthridge, David Perkins, Susan Thomas, Mike Jones, Matthew McGrail, Penny Buykx, Marita Chisholm, Sue Kirby, David Lyle, Yuejen Zhao, John Wakerman – Front (L-R): Lisa Lavey, John Humphreys, Deborah Russell, Jessamy Bath, Tim Carey

Project Manager

In addition to the organisational and academic leadership, a key role in any successful research organisation is that provided by the Project Manager. The exceptional performance of Lisa Lavey in fulfilling this role was a critical component of the success of the CRERRPHC. Initially Lisa Lavey occupied this role half-time, but for the latter three years of the CRERRPHC she assumed the role full-time because of the onerous work-load and diverse nature of its national activities. The task of the project manager included:



Lisa Lavey

1. Organising meetings and conference attendance;
2. Interfacing with stakeholders, universities, governments , health authorities and professional bodies;
3. Meeting all reporting and contractual requirements;
4. Developing and maintaining the CRERRPHC website;
5. Establishing and managing the CRERRPHC Twitter page;
6. Preparation of the CRERRPHC newsletter and other publicity for the CRERRPHC;
7. Developing and maintaining a database for monitoring the impact of the CRERRPHC;
8. Finalising and desk-topping all reports and publications;
9. Liaising with APHCRI and the broader CRE Network;
10. Being responsible for finances and all fiscal reporting; and
11. Managing an extensive range of extraneous duties that evolved during the course of the CRERRPHC.

In addition, the Project Manager, in conjunction with the Project Manager from the the Centre for Obesity Management and Prevention Research Excellence in Primary Health Care (COMPaRE-PHC) and the Research Manager at APHCRI, developed a “Tips for New Players” document to assist in the establishment and management of multi-institutional centres of research excellence. This document was presented at Australia’s 2013 *Primary Health Care Research Conference* and which subsequently formed the basis for a \$20,000 grant to further develop and validate this important tool.

Chief investigator meetings

Chief Investigators met regularly each fortnight by teleconference to discuss all aspects of the performance of the CRERRPHC. This important and at times onerous responsibility ensured the efficient functioning of the centre, facilitated and enabled strategic forward planning, and maintained a strong focus on relevant, rigorous and high-quality academic research.

Research Stream meetings

Central to the academic success of the CRERRPHC is the full engagement of all staff, thereby ensuring shared communication and understanding of the requirements of the CRERRPC and strong guidance and supervision of early-career researchers and postgraduate students. To that end, Stream Leaders and all academic staff linked by teleconference each alternate fortnight to report and discuss progress with projects.

LINKAGE WITH END-USERS

With PHC research, the engagement of end users (including health authorities, service providers, policymakers and consumers) is vital to the effective planning, implementation and take-up of outcomes. The CRERRPHC research program incorporated a comprehensive strategy to ensure regular and effective communication and widespread dissemination of its activities so that end-users are aware of, and informed by, the research program, in order to maximise take-up and implementation.

Role of the Advisory Committee

The CRERRPHC established a National Advisory Committee (NAC) made up of key remote, rural and Indigenous policymakers, consumers, service providers and advocacy groups. The National Advisory Committee included representation of key rural groups such as the Health Consumers of Rural and Remote Australia Inc. (HCRRA) and peak Indigenous organisations such as the Aboriginal Medical Services Alliance of the Northern Territory (AMSANT). Details of members, terms of reference and meeting dates are shown in Appendix 1. While the composition changed over the four-year period, every attempt was made to ensure widespread organisational and geographic representation.

Governments and bureaucrats

Staff from the CRERRPHC maintained regular contact with policymakers and staff from the Australian Department of Health, both through face-to-face meetings and teleconferences. The CRERRPHC conducted and led several seminars, roundtables and meetings over the four years, details of which are shown in Appendix 2. Evaluation feedback from such meetings showed that these were highly valued and provided a useful avenue for informing staff from across a wide spectrum of government (see Appendix 3).

APHCRI

CIs from the CRERRPHC maintained regular contact with APHCRI, including face-to-face meetings, attendance at CRE network meetings, regular interaction with APHCRI Directors, and in relation to ongoing reporting requirements. Staff from the CRERRPHC have been actively engaged with the newly emerging APHCRI interest group in geo-spatial analysis and spatial epidemiology by participating in forums and as a member of its advisory group.

Health services, professional organisations and consumers

The CRERRPHC approach to PHC research was very much aligned to the principles and processes that underpin the Canadian Institutes of Health Research Citizen Engagement framework.²⁴ To that extent, our team employed processes whereby consumers were engaged as a member of the NAC or reference groups associated with the actual research activity, as in the cases of the Elmore Primary Health Service research or the evaluation studies in Aboriginal communities by Wakerman and his staff.

Research outcomes were always translated in a form suitable to meeting the needs of different audiences, including the mass media (both print and radio); brochures and presentations for diverse lay audiences; in culturally appropriate forms for Indigenous communities and ethnic groups; in 1:3:25 format reports for politicians and bureaucrats; in peer-reviewed publications; and in social media and electronic format on our websites

and associated links. Staff also presented at numerous conferences and scientific meetings to inform their constituency about the most current evidence relating to rural, remote and Indigenous health services research.

In summary, the CRERRPHC staff maintained excellent and regular interaction with its diverse population of stakeholders, ensuring that good communication channels facilitated dissemination and take-up of the outcomes of the centre.

ACADEMIC RESEARCH & KNOWLEDGE GENERATION METHODS

The CRERRPHC team brought together extensive research methodological expertise, including sophisticated geographical information system (GIS) and regression modelling, analysis of large data sets, longitudinal survey and program evaluation skills, systematic review skills, health economics expertise, detailed case-study and qualitative expertise, and importantly, the research skills required to work closely with Indigenous communities. Each research stream adopted methods most appropriate to its investigations. All research activities were usually preceded by an extensive review of the relevant literature to guide the study. In addition, a major 2½ day research methods workshop (together with a comprehensive manual) was held in Adelaide for early-career researchers within the CRERRPHC.

Specific methods underpinning the activities of each stream are provided in detail in the publications listed at Appendix 7. In summary these generally comprised:

Stream 1

Wherever possible, researchers drew on existing secondary data available at the national level, and only collected primary data where necessary. A systematic assessment was undertaken of existing (secondary) primary care workforce datasets. Researchers drew on data available at the national level or specific state-level data, but remained limited by the aggregated nature of most secondary datasets. Notable exceptions of usable small-area workforce datasets were Medicare Australia and the Australian Medical Publishing Company (AMPCo), both enabling full-time equivalence data of rural general practitioners at the town or community geographical level. Datasets from state-level Rural Workforce Agencies were additionally used for subprojects relating to rural workforce retention and turnover modelling.

In the absence of any empirical secondary data relating to health service utilisation behaviour of rural residents, primary data was sought. An extensive delivery-and-collection survey of residents from five small rural communities across two states was conducted in order to derive empirical data relating to access behaviour when seeing a doctor for a non-emergency consultation. Differences were analysed between residents of densely-populated and sparsely-populated rural communities, notably of 'distance-decay' (propensity to travel larger distances for health care) and most important access dimensions (when deciding to utilise health care) using multivariate regression models and paired-comparison methods. The survey instrument is shown in Appendix 4.

A key aim was to improve the measurement of spatial accessibility to health services. Sophisticated Geographical Information System (GIS) techniques were utilised to achieve this, notably using road network analysis methods within the ArcView software. Floating catchments were then used as the framework for calculating accessibility, with Stream 1

testing and developing improved methodologies suitable for large geographies and national-level applications. This led to the development of the Index of Access measure.

Stream 2

The complex nature of the benchmarking research required both qualitative and quantitative methods. First, a systematic review of international peer-reviewed literature was undertaken as the basis for determining what is known about core primary health care services. Building on this evidence, a comprehensive Delphi study comprising experienced rural and remote experts from across Australia was conducted, and the results formed the basis for a face-to-face focus group meeting held in Adelaide.

A complex methodology was used to develop a sample of high performing PHC services in rural and remote Australia for primary data collection. Data for potential primary care practices were accessed with permission through the Improvement Foundation Australia (IFA) based on the Australian Primary Care Collaboratives.²⁵ Staff from the CRE in Primary Health Care Microsystems: researchers at the Greater Green Triangle University Department of Rural Health, Flinders and Deakin Universities assisted this process. Practice quality scores were based on improvement measures over one year, for type 2 diabetes mellitus and coronary heart disease. Additional data included ABS census data (used to assign a population to the communities where the primary care practice was located), and an ASGC-RA 1-5 rating applied to each community. Eligible practices were sorted according to 12 population groups. Following ethics approval from the Central Australian Human Research Ethics Committee (HREC-12-57), practices from four states and one Territory were approached to participate in the 'benchmarking' study. The survey instrument is shown in Appendix 5. The timing of the data collection was dependent on the availability of practices. Face-to-face, on-site visits were conducted by at least two members of the CRERRPHC, and data collected were supplemented by the provision by each practice of additional detailed financial and workforce data. Both quantitative and qualitative analyses were employed to examine the data.

Stream 3

Because the range of PHC service models varies greatly across rural and remote areas, a key aspect of the methodology was to review the vast extant literature in order to identify gaps with existing knowledge. A wide range of stakeholders, practitioners, service providers and health organisations from diverse rural and remote areas worked closely with the research team to facilitate both primary and secondary data collection, and the maintenance of these relationships was vital in contributing to the success of the research activity. A range of both qualitative and multivariate quantitative methods were used for data analysis, with specific details provided in each of the peer-reviewed publications listed in the next section.

CAPACITY BUILDING

A key goal of the CRERRPHC was building the next generation of rural health researchers. The CRERRPHC research capacity building programs sought both to increase the quantum of experienced post-doctoral researchers ready to lead future research efforts, and also to deliver a cohort of competent researchers who have completed PhDs in rural and remote centres. The CRERRPHC also sought to engage rural health policymakers, service providers and consumers in the research process.

Part of its strategy to achieve this was through providing supervisors and mentors from multiple sites across rural and remote Australia, assisted by using information technology to overcome the isolation of small groups of research students in rural and remote locations. The supervision team brought together considerable multi-method expertise in applied epidemiological, bio-statistical and health economics skills (using large data sets and sophisticated econometric modelling); rural health workforce, services and policy; and indigenous health. The extensive research training expertise and experience provided by the CIs was complemented by that of Associate Investigators and international partners.

Two broad strategies were used to build research capacity:

(i) Internal – ‘Growing PhD and Post-Doctoral Researchers’

The CRERRPHC provided PhD scholarships and post-doctoral positions in Bendigo, Alice Springs and Broken Hill, supported by high level research supervision from across institutions. Five PhD students were supported. Post-doctoral researchers were supported to gain CI status on nationally competitive grants as a means of ensuring future research leadership and sustained PHC research activity in rural areas. These early career researchers were also given significant exposure to the process of knowledge translation through their participation in meetings with high-level policymakers in government.

As part of a strategy to help break down research isolation resulting from the tyranny of distance characterising rural and remote areas, the CRERRPHC made extensive use of interactive technology to maximise research support. Supervisors, mentors, higher-degree students and post-doctoral researchers operating from widely dispersed sites engaged in several training programs, including journal clubs, virtual methods training workshops, research forums, and seminars on topical health service reform issues and policy debates.

(ii) External – ‘Building research skills of rural health practitioners’

The CRERRPHC provided funding support to release staff from PHC services for one day a week for a period of two years. Expressions of interest from rural health practitioners working in all CRERRPHC catchment areas were sought, detailing potential projects, the nature of support from their practice or employer, and their interest and experience in undertaking research. These were reviewed and short-listed, potential candidates interviewed, and 9 offers were made.

Following their induction, site supervisors worked closely with these early career researchers to fashion their projects in accord with the aims of the CRERRPHC and to ensure they were feasible. All successful candidates were funded to attend a 2½ day face-to-face methods workshop held in Adelaide early in their program. Regular teleconferences were held between site supervisors and students to discuss problems and as a means to share ideas and discuss their research. Each student selected a research topic relevant to the interests and needs of their practice and community, and

was expected to complete a peer-reviewed publication at the conclusion of their 'internship'.

KNOWLEDGE TRANSFER

Knowledge transfer was an integral part of the CRERRPHC program. To that end, staff from the CRERRPHC adopted a multi-faceted knowledge translation strategy that maximised dissemination of research outcomes and the likelihood of knowledge take-up by effectively engaging and targeting likely end-users.²¹

Dissemination of research outcomes – Website and Newsletters

Effective communication with all stakeholder groups is vital to knowledge translation and the uptake of evidence into policy and practice. Our current knowledge dissemination has national reach to the most remote Australians.²³ Given the diversity of media and the plural nature of its intended audience and interested organisations, the CRERRPHC adopted a broad-ranging dissemination strategy that spanned peer-reviewed publications, conference and workshop presentations, newsletters, media presentations, use of twitter, and a web-site (See appendices 6, 7, 8 and 9).

Tracking knowledge impact and uptake

The ability of research to influence the PHC sector depends on the quality, relevance and timeliness of the evidence generated and a robust communication strategy that engages with the diverse stakeholder population. An important aspect of evaluating the research undertaken by the CRERRPHC was ensuring that there existed a comprehensive framework against which its impact could be assessed. A particularly important aspect of this was ascertaining which audiences were being impacted and the nature of the impact. For this reason, CRERRPHC staff invested considerable time in reviewing current literature on knowledge transfer as the basis for developing a fit-for-purpose research impact framework. This resulted in an important publication.

- > **Buykx P, Humphreys JS, Wakerman J, Perkins D, Lyle D, McGrail M & Kinsman L** (2012). 'Making evidence count' - A framework to monitor the impact of health services research, *Australian Journal of Rural Health*, 20: 51-58.

This research impact conceptualisation formed the basis for constructing an impact monitoring database for the purpose of harnessing all measures of the research impact. Led by CRERRPHC Project Manager, Lisa Lavey, together with assistance provided by Dr Matthew McGrail, the database was developed using Microsoft Access to handle complex data. Underpinned by the research impact framework, the impact indicators are organised by who is affected by the research (academics, policymakers, service delivery providers and society at large), and whether the impacts were initiated by the producer or by the user of the research.

Knowledge translation strategies

A key aspect of the CRERRPHC mandate was the translation of knowledge generated into PHC policies and practice. Given that uptake of evidence depends more on factors related to the behaviour of researchers and the receptivity of decision-makers and practitioners than on the attributes of the research itself,²⁴ the CRERRPHC worked closely with leading stakeholders, consumers and policymakers to ensure that the research was based on user needs and accorded with the right predisposition or political and material

conditions. Evidence was contextualised within the environment in which it was to be used. Good use was made of the NAC, meetings with APHCRI and the Department of Health, reference groups which included representation of key stakeholders from all State, Territory and national government health departments, key organisations such as the National Rural Health Alliance, Colleges of General Practice and Rural Medicine, Indigenous organisations, nursing and allied health organisations, and consumers.

Part of the CRERRPHC knowledge translation strategy was to help build capacity for up-take by decision-makers. The CIs have been extensively involved with national policymakers and decision-makers through presentations, workshops, meetings and targeted distribution of its publications. Working closely with, and providing evidence directly to, these networks and 'communities of practice' has been shown to be one of the most effective means of knowledge dissemination and take-up.

An additional requirement of the CRERRPHC was to respond to government requests for evidence. The CRERRPHC has built on its existing very strong track record to respond to requests from government and health authorities to provide advice and undertake timely research relevant to their immediate policy needs and imperatives. This was exemplified especially well in the work undertaken by staff from the CRERRPHC in developing an improved classification to overcome existing problems with use of the ASGC-RA scheme to underpin rural and remote programs by the Department of Health. More details on the construction and adoption of the '*Modified Monash Model*' are outlined in the next section.

Section 3 – Results

KNOWLEDGE GENERATION

The Stream 1 research program was led by Dr Matthew McGrail. What follows is a very brief resume of key outputs, because a significant amount of this activity has already been disseminated in the peer-reviewed literature (see Appendix 6).



Dr Matthew McGrail

Stream 1: the geography of access and equity:

Stream 1 has generated important new evidence relating specifically to three vitally important aspects of access and equity:

- (i) *The development of a national index of access based on service availability, need for care, and their ability to access services;*

Unlike existing measures of access, this index integrates population health needs within its measurement, thereby measuring ‘equity of access’ and not just rurality or remoteness. Using available secondary data, the Index is sensitive to small area differences and longitudinal changes in services, and adaptable for measuring access to PHC services in rural, remote and outer-metropolitan areas. This improved measure of access can be used to inform the optimal delimitation of integrated PHC services into regional networks at different geographical scales (such as Medicare Locals/Primary Health Networks) or changes in access with new services (such as GP Superclinics).

Key publications in Appendix 7 include:

- **McGrail M & Humphreys JS** (2014). Defining dynamic catchment sizes for primary health care - a critical component of large area spatial accessibility using the two-step floating catchment area method, *Applied Geography*, 54: 182-188.

- (ii) *New empirical information of patterns of utilisation of health services;*

For purposes of health service planning, it is vital to know the ease with which patients can access an appropriate service at times of need. In a country as large and diverse as Australia, patterns of service utilisation differ. Many factors affect this, but unfortunately there has been a dearth of empirical research to identify how different factors facilitate or impede service use, and how these vary across geography.

Staff from Stream 1 of the CRERRPHC undertook a survey of 5 small communities varying in geographical location which ascertained their usual behaviour with respect to use of primary care health services and gathered information about the distances they would be prepared to travel to obtain PHC at times of need. The results gained from these empirical data were vitally important in informing the parameters of the Index of Access model, thereby assuring it of greater construct validity. Key publications in Appendix 7 include:

- **McGrail M, Humphreys JS & Ward B** (in press). Accessing doctors at times of need – measuring the distance tolerance of rural residents for health-related travel, *BMC Health Services Research*.
- **Ward B, McGrail M & Humphreys JS** (2014). Which dimensions of access are most important when rural residents decide to visit a general practitioner for non-emergency care?, *Australian Health Review*, Available at: http://www.publish.csiro.au/?act=view_file&file_id=AH14030.pdf

(iii) The development of a 'fit-for-purpose' classification to guide the allocation of workforce incentives.

Given the CRERRPHC mandate of being responsive to the needs of government, and recognising the long-standing inequities and problems associated with continued use of the ASGC-RA classification to guide rural and remote incentives programs, staff from the CRERRPHC combined their collective expertise with data from the *Medicine in Australia: Balancing Employment and Life* (MABEL) project (of which Humphreys and McGrail were CIs) to generate a new improved classification scheme which is based on what rural doctors actually do and the differing geographical contexts in which they practise. The outcomes of this research were published in a peer-reviewed journal and received widespread acclaim from government and professional organisations for their practical application. The policy significance and process by which it has become applied is outlined in the following Discussion and Policy Option section. Key publications in Appendix 6 include:

Humphreys JS, McGrail M, Joyce C, Scott A & Kalb G (2012). Who should receive recruitment and retention incentives? Improved targeting of rural doctors using medical workforce data, *Australian Journal of Rural Health*, 20: 3-10.

Case Study: Matthew and Robert Graham Centre Visiting Fellowship

Dr Matthew McGrail was awarded the 2014 Australian Primary Health Care Research Institute (APHCRI) Robert Graham Center Visiting Fellowship to further investigate how GIS and large datasets can be efficiently and effectively utilised to underpin rural primary health care policies relating to workforce planning and service delivery.



Matthew's Fellowship enabled him to travel to the Robert Graham Center (RGC) in Washington DC for five weeks in October and November

L-R: Andrew Bazemore (RGC Director), Matthew McGrail & Steve Petterson (RGC Research Director).

2014 where he worked with geospatial and health services researchers on two new projects, the first investigating how 'rurality' and other geographical characteristics relate to retention of rural primary care doctors in the USA; and secondly on spatial accessibility outcomes in both Australia and the USA.

Matthew also travelled to the Northern Illinois University, in DeKalb, Illinois, where he discussed the 2-step floating catchment area method with Professor Wei Luo and conducted a one-hour research colloquium to postgraduate students in the Department of Geography. Matthew also visited Dr Don Pathman and Professor Tom Ricketts, both world leaders of rural workforce retention and mobility research, at the Sheps Centre for Health Services Research in North Carolina.

He also joined 1,000 attendees from 15 countries at the North American Primary Care Research Group (NAPCRG) Annual Meeting in New York.

Stream 2: Benchmarking the impact of rural and remote context on primary care practice:

It has been recognised for some time that “a critical component of monitoring and strengthening the performance of national health systems is the identification of a set of benchmarks and indicators – and the means for their measurement – for monitoring the health workforce”.²⁵ Led by John Wakerman, Stream 2 research staff undertook land-mark research investigating the generation of benchmarks for primary health care services in differing geographical contexts.

The first stage was a comprehensive systematic review of extant (national and international) literature, in order to ascertain what PHC services were considered optimal in order to ensure equitable access to health care in varying communities differing in size and geographical location. The resultant publication was so timely and significant that it achieved ‘highly accessed’ status almost immediately.



Professor John Wakerman

Stage two involved a comprehensive Delphi study of experts from across rural and remote Australia, and defined what core PHC services rural and remote residents should reasonably expect to access. A key aspect of this research was identifying their availability for communities differing in population size and geographical location.

The third stage of the work involved primary data collection from exemplary PHC services stratified by size and geographical location. This extensive fieldwork required the cooperation of selected PHC services in providing detailed workforce, financial and service data relating to their practice. This work is still in progress. However, two key messages already emerging from data are:

- (i) the need for an efficient methodology to collect comprehensively the quantitative data associated with the costs of providing PHC in different settings, and
- (ii) the immense value and insight gained from the qualitative data provided by existing PHC workers about what they actually do in their communities and the support they require to deliver comprehensive PHC.

Key publications with detailed results to date include:

- **Thomas SL, Wakerman J & Humphreys JS** (2014). What core primary health care services should be available to Australians living in rural and remote communities? *BMC Family Practice*, 15(143) 1-9. **Highly accessed**. Available at: <http://www.biomedcentral.com/1471-2296/15/143>
- **Carey TA, Wakerman J, Humphreys JS, Buykx P & Lindeman M** (2013). What primary health care services should residents of rural and remote Australia be able to access? A systematic review of "core" primary health care services, *BMC Health Services Research*, 13:178. **Highly accessed**. Available at: <http://www.biomedcentral.com/content/pdf/1472-6963-13-178.pdf>

Stream 3: Primary health care models:

Research undertaken in Stream 3 specifically targeted improved equity in health outcomes associated with improved access to integrated models of care, especially mental health and aged care. This focus on mental health and aged care, particularly as they apply in Indigenous populations, reflects the importance of these national priority areas for rural and remote communities currently experiencing the most inequitable access to services.

A detailed examination of one innovative model of care for mental health (which built on extensive work investigating rural emergency mental health access utilising telehealth, integrated models of care, and with the Royal Flying Doctor Service and rural GPs) was conducted by Staff from the Broken Hill node of the CRERRPHC led by PhD student, Emily Saurman and her supervisors Professor David Lyle and Dr Sue Kirby, with a number of significant publications emerging:

- **Saurman E, Lyle D, Kirby S & Roberts R** (2014). Use of a mental health emergency care-rural access programme in emergency departments, *Journal of Telemedicine and Telecare*, 20(6): 324-329.
- **Saurman E, Lyle D, Kirby S & Roberts R** (2014). Assessing program efficiency - a time and motion study of the Mental Health Emergency Care-Rural Access Program in NSW Australia, *International Journal of Environmental Research and Public Health*, 11(8): 7678-7689.
- **Saurman E, Lyle D, Kirby S & Roberts R** (2014). The successful provision of emergency mental health care to rural and remote NSW – an evaluation of the Mental Health Emergency Care – Rural Access Program, *Australian Health Review*, 38(1): 58-64.
- **Saurman E, Johnston J, Hindman J, Kirby S & Lyle D** (2014). A transferable telepsychiatry model for improving access to emergency mental health care, *Journal of Telemedicine and Telecare*, 20(7): 391-399.



Professor David Lyle

Important research was also undertaken in relation to mental health and aged care, where a key factor in health system reform is to connect health and aged care services for people over the course of their lives. Accordingly, in line with priorities identified by practitioners and consumers in remote areas, this research sought to ensure streamlined, consistent assessment of eligibility for care across all aged care programs, and coordinated service provision with the broader system of care. The significant unmet need associated with access to community and residential care services, particularly for Indigenous populations, people with dementia and other mental health problems, financially disadvantaged people, and people living in remote areas is widely recognised. Importantly, CRERRPHC research also examined the important issue of acceptability of PHC services to Indigenous patients and community participation. Staff from the Alice Springs node of the CRERRPHC, including Professor Tim Carey, Postdoctoral Research Fellow Associate Professor Melissa Lindeman, and PhD student Jessamy Bath led important work in this area. Key publications include:

- Dingwall KM, **Lindeman MA** & Cairney S (2014). "You've got to make it relevant": barriers and ways forward for assessing cognition in Aboriginal clients, *BMC Psychology*, 2(13): 1-11.

- Amsters D, Kendall M, Schuurs S, **Lindeman M** & Kuipers P (2013). Allied health professionals as consultants: An exploratory study in an Australian context, *The Internet Journal of Allied Health Sciences and Practice*, 11(3): 1-10.
- **Bath J & Wakerman J** (2013). Impact of community participation in primary health care: what is the evidence?, *Australian Journal of Primary Health*, online. <http://dx.doi.org/10.1071/PY12164>.
- **Carey TA** (2013). A qualitative study of a social and emotional wellbeing service for remote Indigenous Australians: Implications for access, effectiveness, and sustainability, *BMC Health Services Research*, 13(80): 1-11. doi: 10.1186/1472-6963-13-80.
- **Carey T**, Tai SJ & Stiles WB (2013). Effective and efficient: Using patient-led appointment scheduling in routine mental health practice in remote Australia, *Professional Psychology: Research and Practice*, 44(6): 405-414.
- Dingwall KM, Pinkerton J & **Lindeman MA** (2013). "People like Numbers": a descriptive study of cognitive assessment methods in clinical practice for Aboriginal Australians in the Northern Territory, *BMC Psychiatry*, 13(42): 1-13.
- **Lindeman MA** & Flouris A (2013). Youth program workforce in remote Indigenous communities: what do we need and what can we expect?, *New Community*, 11(43): 61-67.
- Lopes J, Flouris A & **Lindeman MA** (2013). Youth programs in Central Australian Indigenous communities, *Youth Studies Australia*, 32(1): 55-62.
- Schouten K, **Lindeman MA** & Reid J (2013). Nutrition and older Indigenous Australians: service delivery implications in remote communities. A narrative review, *Australasian Journal on Ageing*, 32(4): 204-210.
- Bullbrook KM, **Carey TA**, Lenthall S, Byers L & Behan KP (2012). Treating mental health in remote communities: what do remote health practitioners need? *Rural and Remote Health*, 12: 2346. (online). Available: <http://www.rrh.org.au/articles/subviewnew.asp?ArticleID=2346>.
- **Lindeman MA**, Taylor KA, Kuipers P, Stothers K & Piper K (2012). 'We don't have anyone with dementia here': a case for better intersectoral collaboration for remote Indigenous clients with dementia. *Australian Journal of Rural Health*, 20(4): 190-194.
- LoGiudice D, Smith K, Shadforth G, **Lindeman MA**, Carroll E, Atkinson D, Schaper F, Lautenschlager N, Murphy R, & Flicker L (2012). Lungurra Ngoora: A pilot model of care for aged and disabled in a remote Aboriginal community. Can it work? *Rural and Remote Health*, 2078(online): 1-11.
- Lopes J, **Lindeman MA**, Taylor KA & **Grant L** (2012). Cross cultural education in suicide prevention: development of a training resource for use in Central Australian Indigenous communities. *Advances in Mental Health*, 10(3): 224-234.
- **Carey TA** (2011). As you like it: adopting a patient-led approach to psychological treatments, *Journal of Public Mental Health*, 10(1): 6-16.
- Carey, T.A., Bell-Booth, R., Coyne, J., Madgen, C. & Nixon, R.D.V. (2011). Going Bush: The experience of remote postgraduate psychology placements, *InPsych* The Bulletin of the Australian Psychology Society Ltd, June 2011: 26-27.
- Taylor KA, **Lindeman MA**, Stothers K, Piper K & Kuipers P (2012). Intercultural communications in remote Aboriginal Australian communities: what works in dementia education and management? *Health Sociology Review*, 21(2): 208-219.

Rural area case study 1 – The Elmore Primary Health Service study



L-R: Deborah Russell, John Humphreys, Lisa Lavey with Rohan Jenner & Kathy Tuohey (EPHS)

The CRERRPHC was awarded further funding from the Commonwealth Department of Health to continue its Elmore Primary Health Service (EPHS) longitudinal study. Working closely in partnership with staff from the EPHS, the project is:

- i. Evaluating the performance and sustainability of the service, and
- ii. Monitoring the quality of care, changes in health outcomes of residents using the service, and the impact of the service on community viability and satisfaction.

Numerous benefits have accrued from this collaboration, including peer-reviewed publications, quality improvement in the service, research capacity building of local rural health professionals, and knowledge translation to many other small rural and remote health services. Testimony to the value of embedding research closely with service delivery was EPHS's success in receiving the 2015 Victorian 'Rural General Practice Award' from more than 120 nominations. Publications include:

- **Ward BM, Buykx PF, Tham R, Kinsman L & Humphreys JS** (2014). Investing in longitudinal studies of primary health care: what can we learn about service performance, sustainability and quality? *Rural and Remote Health*, 14:3059.
- **Ward B, Buykx P, Tham R, Kinsman L & Humphreys JS** (2014). Staff perceptions of primary healthcare service change: influences on staff satisfaction, *Australian Health Review*, <http://www.publish.csiro.au/paper/AH14015.htm>
- **Buykx P, Humphreys JS, Tham R, Kinsman L, Wakerman J, Asaid A & Tuohey K**, 2012: How do small rural primary health care services sustain themselves in a constantly changing health system environment? *BMC Health Services Research*, 12:81. Available at: <http://www.biomedcentral.com/1472-6963/12/81>
- **Tham R, Humphreys JS, Kinsman L, Buykx P, Asaid A & Tuohey K**, 2011: Study protocol: Evaluating the impact of a rural Australian primary health care service on rural health, *BMC Health Services Research*, 11:52 doi:10.1186/1472-6963-11-52.



L-R: 2015 Victorian Rural General Practice Award: Dr Adel Asaid (EPHS), State parliamentary secretary for health Mary-Anne Thomas & Kathy Tuohey (EPHS)

Remote area case study 2 – The Fitzroy Crossing study.

There is increasing evidence that strengthening primary health care is the key pathway to reducing health inequities in disadvantaged populations. The caveat, however, is that it must be comprehensive and involve community participation to ensure needs are met in a manner that is acceptable to the community. In order to have any long term effects on health outcomes, it must also be sustainable as well as addressing the social determinants of health.



Dr Carole Reeve

An example of these principles in action is the evolution of health services in the Fitzroy Valley in the Kimberley region of northern Western Australia. Led by Carole Reeve, staff from the CRERRPHC have had the privilege of observing and studying their journey over the past few years.

The personal impact of the mortality due to chronic disease and underlying socioeconomic disadvantage was the catalyst for community-initiated changes in health service delivery. Over a 10-year period involving two extensive 18-month-long periods of community consultation, a Community Controlled Health Service was established and a formal partnership with the State Health Service established. The result was a unique partnership enabling a comprehensive approach to primary health care.

The Community Controlled Health Service provides health promotion, environmental health services, and Cultural Guardianship, and has had a significant impact on health in the Fitzroy Valley through alcohol restrictions and addressing the social determinants of health. Through the Partnership, it has also had a significant impact on reorienting health service delivery. The shared vision with the State Health Service to make illness prevention a priority was made possible through the policy changes embodied in the National Health Reform.

The changes in health service delivery resulting from this reorientation included a systematic approach to screening for chronic disease and implementing interdisciplinary care as cases were identified, in addition to dealing with the presenting complaint.

Understanding how this innovative primary health care service evolved, and the factors instrumental in bringing about significant reorientation to a comprehensive primary health care service relevant to the local context, provides important insight into the requirements for effective health service change and sustainability, thereby informing policy and service development for other small disadvantaged communities. This case study highlights what is possible and necessary to deliver appropriate and accessible primary health care in communities seeking to align services with local needs. Publications resulting from this work include:

- **Reeve C, Wakerman J & Humphreys JS** (In press). Strengthening primary health care: achieving health gains in a remote region of Australia, *The Medical Journal of Australia*.
- **Reeve C, Humphreys JS, Wakerman J, Carroll V**, Carter M, O'Brien T, Erlank C, Mansour R & Smith B (2015). Community participation in health service reform: the development of an innovative remote Aboriginal health care service, *Australian Journal of Primary Health*, <http://www.publish.csiro.au/paper/PY14073.htm>



L-R: John Wakerman & John Humphreys

CAPACITY BUILDING

Internal program

The CRE has achieved considerable success in the training and development of early career researchers, a function of close engagement of staff on core research projects within our individual centres. The capacity building program was complex, partly due to the time and resources required to train researchers with different interests from different backgrounds working in different environments, and because of the long time period required to ensure rigorous training appropriate to the needs of the researcher. Nonetheless, considerable success was achieved, as exemplified by the following case-study of one of the five PhD students.

PhD Case study – Deborah Russell

Dr Deborah Russell exemplifies the successful research capacity building undertaken by the CRERRPHC. Deb undertook important research on the critical issue of PHC workforce retention in rural and remote areas. Her PhD thesis, *'The patterns, determinants and measurement of rural and remote primary health care workforce turnover and retention'* has provided important new empirical evidence to guide rural health workforce retention policies. Deb received her testamur at a graduation ceremony in December at the Monash University Clayton campus. Her publications include:



Dr Deborah Russell

- **Russell DJ, Humphreys JS, McGrail M, Cameron I & Williams PJ** (2013). The value of survival analysis for evidence-based rural medical workforce planning, *Human Resources for Health*, 11:65.
- **Russell DJ, Humphreys JS, Wakerman J, Buykx P, Chisholm M, McGrail M & Ward B** (2013). Helping policymakers address rural health access problems, *Australian Journal of Rural Health*, 21: 61-71.
- **Russell D, Wakerman J & Humphreys JS** (2013). What is a reasonable length of employment for health workers in Australian rural and remote health care services?, *Australian Health Review*, 37: 256-261.
- **Russell D, Humphreys JS & Wakerman J** (2012). How best to measure health workforce turnover and retention: five key metrics, *Australian Health Review*, 36: 290-295.
- **Russell D, McGrail M, Humphreys JS & Wakerman J** (2012). What factors contribute most to the retention of general practitioners in rural and remote areas? *Australian Journal of Primary Health*, 18: 289-294.
- **Chisholm M, Russell D & Humphreys JS** (2011). Measuring rural allied health workforce turnover and retention: What are the patterns, determinants and costs? *Australian Journal of Rural Health*, 19: 81-88.

Noteworthy too has been the extent to which involvement with the CRERRPHC research program has assisted career development of many staff, several of whom have risen to senior academic positions in universities. The promotions include:

- > Matthew McGrail promoted to Senior Research Fellow, Monash University

- > John Wakerman promoted to Associate Dean, Flinders Northern Territory
- > Tim Carey promoted to Professor, Flinders University
- > Melissa Lindeman promoted to Associate Professor, Flinders University
- > Mike Jones promoted to Professor, Macquarie University
- > David Perkins promoted to Professor, University of Newcastle
- > Leigh Kinsman promoted to Professor, University of Tasmania
- > Penny Buykx has taken up position of Senior Research Fellow, University of Sheffield
- > John Humphreys to Emeritus Professor status, Monash University

External program:

The comprehensive methodology that was devised to meet the needs of the external early career researchers has already been described. Much credit for the program must be attributed to the diligence, expertise and commitment of the three supervisors – Dr Sue Kirby, Dr Bernadette Ward and Dr Susan Thomas – who spent countless hours working in close conjunction with their individual students.

In addition, considerable gain was made from conducting group workshops throughout the CRERRPHC program, as exemplified in the following case-study.

Research capacity-building case-study

CRERRPHC researchers at the Broken Hill University Department of Rural Health dedicated a week from 15-18 July 2013 to writing up the results of their research for publication in academic journals. With the support and mentoring of Professors David Lyle and John Humphreys, five researchers took the opportunity to progress the completion of draft papers for publication.

The week was structured to ensure that each researcher was able to have two one-on-one meetings with a research mentor to discuss, reflect and critique their draft research article after the introductory meeting.

These meetings were complemented by two presentations. The first focused specifically on research writing for academic journals. The second presentation, attended by a wide audience of local service providers and researchers, discussed the importance of using a systemic evaluation framework to monitor the effectiveness of delivering primary care services to rural communities. Research activity in Broken Hill is clearly well embedded in the health system of the Far West region of New South Wales.



Broken Hill research workshop

*L-R: Sue Kirby, Frances Boreland,
Debra Jones, David Lyle & Emily
Saurman*

KNOWLEDGE TRANSFER

The process of knowledge translation is complex, as testified by the vast literature on this topic. In order to ensure that the research undertaken by the CRERRPHC achieved maximum impact and take-up, the team adopted a very strategic approach. Building on its acknowledgement of the need to research issues that were topical and timely for governments, health authorities, rural and remote health services and communities, staff focused on three priority areas:

- i. Ensuring that its target audiences were fully conversant with the research being undertaken and the outcomes achieved
- ii. Monitoring the impact of the research in terms of which audiences were adopting research findings and how they were being accessed, and
- iii. Carefully translating the research through many avenues in order to ensure that they achieved the maximum likelihood of take-up.

Research dissemination – Newsletters and Website:

The CRERRPHC was energetic and vigilant in ensuring that every possible avenue was used for the dissemination of information relating to the research being undertaken. This ranged from maintaining a website, regular newsletters that were circulated in both print form and electronically to key stakeholders, social media, conference and workshop presentations, as well as circulars and media releases for the lay person. Considerable success was achieved through the website, with the added advantage that it was regularly accessed internationally (see Appendix 8). A measure of its impact is that more than 17,000 unique visitors hit the site in excess of 385,000 times. Similarly, feedback from the readership of the CRERRPHC Newsletter (Appendix 9) was extremely positive, with many readers following up with both written and verbal requests for further information. It was clear that the CRERRPHC has managed to capture an extremely comprehensive set of readers and followers. CRE Website: www.crerrphc.org.au

Conceptualising a research impact framework:

In order to formally assess whether the work undertaken by the CRERRPHC has been “making a difference”, staff developed a strategic framework for monitoring which target population was most affected by what type of activity, and the form in which this was being impacted – see:

- **Buykx P, Humphreys JS, Wakerman J, Perkins D, Lyle D, McGrail M & Kinsman L (2012).** ‘Making evidence count’ - A framework to monitor the impact of health services research, *Australian Journal of Rural Health*, 20, 51-58.

Indeed, the framework developed has been widely adopted by a diversity of research organisations, some of whom have further modified it for their own purposes. Importantly, this framework formed the basis for developing a database for recording the many ways in which the research activities were impacting on the policies and practices of rural and remote health stakeholders.

Constructing an impact monitoring database:

Traditional methods for monitoring research often don't show the scope of influence and impact of research. To assist the CRERRPHC in monitoring the impact of its research and related activities, staff from the CRERRPHC have developed a database to capture information on all research activities across all institutions including evidence of uptake or use of research. As Table 1 demonstrates, this database can record a vast amount of detail for an individual, project or program of research. It includes journal articles, books and book chapters, conference and stakeholder presentations, media exposure, evidence of uptake or use of the project's research, and much more. Research projects can be across multiple institutions or individual institutions.

To maximise the value of this new database as a tool for measuring knowledge transfer and impact, the database template is available free of charge to organisations that need to measure the impact of their work from the CRERRPHC under a license agreement with Monash University.

Table 1: Summary chart of research impacts.

Broad area of impact	Specific areas of impact	Key audience Stakeholders	Evidence	
			Producer push	User pull
Research-related impact 'Advancing Knowledge'	<ul style="list-style-type: none"> - New knowledge - Capacity building 	<ul style="list-style-type: none"> - Researchers - Educators - Media 	<ul style="list-style-type: none"> - 79 publications - 79 related-publications - 45 Conference presentations - 26 Related conference presentations - 5 media coverage - 17 successful Grants - 5 PhDs - 17 Invited Visitors 	<ul style="list-style-type: none"> - 13 Invited Conference Presentations - 22 Related invited conference presentations - 3 Invited publications - Access hits & citations - 21 Media interviews - 4 Secondary circulation - 18 Awards/promotions
Policy impact 'Informing decision making'	<ul style="list-style-type: none"> - Evidence base - Influence in decision-making 	<ul style="list-style-type: none"> - Policy makers - Politicians - Professional bodies 	<ul style="list-style-type: none"> - 2 policy briefs - 12 stakeholder presentations 	<ul style="list-style-type: none"> - 5 Policy roundtables - 31 stakeholder presentations - 9 Expert Advice - 2 Rapid responses - 17 Decision maker awareness & use - 7 Invited policy papers - 103 Referee/Reviewer
Service impact 'Improving health & health systems'	<ul style="list-style-type: none"> - Evidence-based practice - Quality & safety - Efficiency - Cost effectiveness 	<ul style="list-style-type: none"> - Managers - Health workforce - Consumers 	<ul style="list-style-type: none"> - Evaluation reports - Practice guidelines - Recommended models 	<ul style="list-style-type: none"> - 2 Invitations - 10 Decision maker awareness & use - 42 Board membership
Societal impact 'Creating broad social & economic benefit'	<ul style="list-style-type: none"> - Health literacy - Health behaviour - Health status 	<ul style="list-style-type: none"> - Consumers - Advocates 	<ul style="list-style-type: none"> ➢ 20 media coverage ➢ 4 Media interviews ➢ Evidence of changes 	<ul style="list-style-type: none"> ➢ Website hits (388,948/17,381 unique) ➢ 159 Twitter followers ➢ 65 Media coverage ➢ 8 Media enquiries ➢ Consumer surveys

Case-study of research into policy – The ‘Modified Monash Model’:

The extent to which research outcomes contribute to policy is often difficult to measure. Few governments or organisations readily “attribute” success to researchers, seeking rather to draw on their expertise indirectly in order to demonstrate that it is in fact the government or authority that is initiating the innovative policy or practice! Moreover, the process from awareness to take-up is invariably long and complicated, and frequently fraught with obstacles and reasons not to adopt evidence-based outcomes because often their implementation is economically or politically too risky.

Nonetheless, the CRERRPHC has achieved considerable success in initiating research to address a long-standing problem in rural health, identify a feasible solution, and (over a three and a half year period) work with government to assist the adoption of research recommendations into policy. A brief resume follows:

Case-study of knowledge translation into policy

i. The policy problem:

In response to problems of recruitment and retention of doctors in rural areas, the Australian Government implemented retention incentive payments. However, the distribution of these payments was based on the ASGC-RA classification that demonstrably resulted in perverse and highly inequitable outcomes. For nearly five years, the Rural Doctors Association led the charge in demanding a fairer basis for the allocation of retention payments.

ii. The research response:

Staff from the CRERRPHC developed a new scheme that was not just based on geography, but rather incorporated an understanding of what doctors actually do and the extent to which their practice location impacted upon the complexity of their work. Using both professional indicators (Total hours worked; Undertakes work in a public hospital setting; On-call for 2+ patients; Difficulty in taking time off) and nonprofessional indicators (Partner employment opportunities; Adequate choice of schools), a new taxonomy was developed. The proposed new scale was shown to be both far more sensitive to important differences, and a better basis for equitable resource allocation based on what doctors do and the impact of the geographical setting on work and life.

iii. The knowledge transfer process:

Despite its acknowledged merit, the process of implementing the research recommendation was extremely complex and extended over three years. CRERRPHC staff made innumerable presentations to Government and professional organisations, drafted a major submission to a Senate Enquiry into Rural Workforce Issues, conducted many telephone discussions and held meetings with bureaucrats in Canberra. The CRERRPHC submission received endorsement from several favourable independent review reports to government:

- *“The committee was impressed with the comprehensive nature of the model....and....is supportive of the methodology and data utilised”* ([Australian Government Senate Enquiry, 2012](#))
- *“The enhancement....is a valuable one.....based on reasonable evidence derived from data generated through the MABEL Study....A modification to the “model” is recommended as the approach most likely to provide positive enhancements to current systems.”* ([Mason Review, 2012](#))
- *“The model provides a sound and practical basis on which to move forward, and the RDAA has joined other stakeholders – including United General Practice Australia – in supporting this model in-principle.”* ([RDAA, 2013](#))

This advocacy was paralleled by ongoing agitation by rural doctors, and ultimately resulted in the Assistant Minister of Health announcing the adoption of a “Modified Monash model” and the formation of an Independent Expert Committee to examine the roll-out of the Rural Retention Grant program on the basis of the new improved classification.

iv. The policy outcome: At the time of writing, the IEC’s report has been accepted by the Minister and forms input into the 2015 Budget process. This notwithstanding, already there is some evidence that this research is making a difference in the policy arena to bring about improved equity. For example, the Assistant Minister for Health, Fiona Nash, commented that the new classification...”*will allow support and resources to be focused on areas where there is the most need – in small rural and remote communities*”.

Section 4 - Discussion and policy implications

This section discusses the implications of the CRERRPHC research for PHC policy and practice. Working in a complex environment characterised by increasing need for PHC associated with an ageing population and within severe fiscal constraint, health authorities are face with many challenges. Nonetheless, a key plank of the national health reform agenda is increasing equity in health outcomes, nowhere more so than for disadvantaged rural and remote communities. The research undertaken within the CRERRPHC provides for the first time a significant evidence base highlighting the health impact of inequitable access to PHC health services, and will assist health authorities in planning PHC service delivery to small, difficult-to-service communities.

Particularly important too is the work done in developing an evaluation framework using sentinel measures by which to monitor progress in health outcome improvements associated with the provision of sustainable PHC services, the value of which is shown in the Fitzroy Valley case-study. Undoubtedly this new knowledge helps to inform policymakers with the criteria that enable them to plan, monitor and evaluate the equitable provision of health care for all Australians.

POLICY IMPLICATIONS – RESEARCH STREAMS

Stream 1

Research in stream 1 focused on providing empirical evidence to improve our understanding of how access affects the utilisation of health services in rural and remote Australia and as the basis for modelling improved provision of PHC services to areas that currently are characterised by inequitable access to care at times of need. Key policy implications include:

- > The need for scarce resources to be allocated on the basis of greatest need, based on evidence-based programs targeting the specific PHC needs of rural and remote areas. Equitable resource allocation will inevitably involve inequalities, but will generate the greatest improvement in population health outcomes based on improved access to appropriate PHC health services and improved health literacy resulting from access to appropriate care.
- > Measures of access need to be modified to take greater account of health needs, patients abilities to access care, and the availability of appropriate PHC services. Geography alone is an insufficient criterion to guide PHC service planning, and crude indicators (such as provider-to-population ratios) are inadequate measures of access.
- > Researchers require improved access to existing unit record and small-area health data in order to work closely with policy-makers in generating improved measures to guide the provision of appropriate PHC services and underpin specific rural and remote health incentive and program funding.

Stream 2

The goal of the complex and ambitious research undertaken in stream 2 was to ascertain the feasibility of 'benchmarking' the workforce and funding requirements necessary to ensure the availability of high-quality, sustainable PHC services in different rural and remote contexts. Comprehensive data and evidence on this issue are largely non-

existent and long-overdue if health service planners, policymakers and funders are to be informed in their decision-making by rigorous evidence about core PHC service requirements of small rural and remote communities. Key policy implications include:

- > Indicators and benchmarks are essential for monitoring the provision of PHC services and evaluating national policies designed to provide effective and equitable health care to all Australians regardless of their place of residence.
- > Significantly more research is required to develop an efficient methodology to collect comprehensively the quantitative data associated with the costs of providing PHC in different sized communities located in different geographical settings in order to develop benchmarks for core PHC services.
- > Improved access to existing administrative data sources is also required.
- > Quantitative analyses of what constitutes a high-performing and sustainable rural and remote PHC service should be complemented by qualitative data provided by existing PHC workers about what they actually do in their communities and the support they require to deliver comprehensive PHC.
- > Evidence collected throughout the Stream 2 research validated previous research²⁶ highlighting important environmental enablers and PHC service requirements necessary to ensure accessible and equitable provision of PHC services

Stream 3

Stream 3 sought to identify and evaluate innovative PHC service models meeting previously unmet needs as the basis for providing a comprehensive evaluation framework that takes account of the significantly different needs and contexts associated with the provision of comprehensive, appropriate, high-quality and sustainable health care. Key policy implications include:

- > While significant commonality exists in the challenges facing PHC services and workers throughout rural and remote areas, models need to be fit-for-purpose, something that is best achieved by policy-makers and funders working in very close association with local health providers and consumers.
- > Improved access to comprehensive PHC services leads to improved equity in health outcomes. Evidence from detailed case-studies in rural and remote communities indicates that appropriate, high-performing PHC services result in fewer workforce supply issues, improved access to and utilisation of services, better health literacy, and significantly improved population health outcomes.

POLICY IMPLICATIONS – RESEARCH CAPACITY BUILDING

Research capacity building is not dissimilar to the gestation period of elephants! – long and slow, but in the end extremely rewarding. To be effective, such activity needs to include a diversity of stakeholders – career academics (through PhD, Post-doctoral and early career mentoring support), health practitioners from across the health spectrum, policy-makers and funders, and consumers – ideally working in close co-operation and collaboration. While the ultimate academic goal might be some peer-reviewed publication adding new knowledge, the actual value of the learning experience should not be underestimated. Indeed, as with many life experiences, the journey is often more valuable than

the end-point. The research capacity building activities undertaken by staff from the CRERRPHC provided a most valuable experience for both the providers and the recipients. Key policy insights include:

- > Strategic monitoring of rural and remote PHC services and workforce issues is vital if governments are to meet their avowed goal of accessible, equitable, effective and sustainable high quality PHC for all Australians, regardless of where they live. To undertake this activity, rural and remote health services require the assistance at the local level of staff with well-developed research and evaluation skills.
- > As with rural and remote PHC service provision, research capacity building programs should not delivered according to a “one-coat-fits-all” model, but rather should be tailored to meet the interests of the participants, the needs and contexts of their services, and the types of research and evaluation skills perceived to be most valuable by the service.
- > The most effective policies clearly emerge from health authorities well versed with matching evidence against community needs and behaviour. Invariably, a sound understanding of, and involvement with, the research generation process assist with efficient and effective formulation and implementation of policy and program responses in meeting the needs for appropriate and effective PHC services. Engagement of policy-makers in research capacity building programs, such as was funded and conducted by the Canadian Health Services foundation, should be encouraged.
- > Ideally, ongoing research collaborations of academic researchers, health workers, consumer and policy-makers should be maintained, with input from each participant at all stages of the research in order to ensure that it is feasible and multi-disciplinary, and that the outcomes are relevant and implementable.

Section 5 - Conclusion

In summary, the CRERRPHC research program has generated significant systematic evidence using objective criteria relating to the numerous issues (including the nature, volume, and distribution of the resources required to overcome problems of poor access to PHC services) impacting on the goal of delivering equitable health outcomes for residents of rural and remote Australia.

The CRERRPHC has also modelled the complex array of strategies required to effect policy and practice change. Moreover, it has developed a tool for monitoring impact and then demonstrated, with the Modified Monash Model, the effectiveness of its strategies and monitoring process.

Although much more research is required, the CRERRPHC has made significant advances in linking inputs to outputs and outcomes identified in Watson's Logic Model¹³ (see Figure 2). Based on this new evidence, policy makers charged with the task of providing appropriate and effective PHC services are better placed to counter ineffective historical, political and 'squeaky-wheel' programs that have done little to effect change with evidence that demonstrates significant advance in access, equity and improvements in health outcomes.

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Appendices

APPENDIX 1: NATIONAL ADVISORY GROUP – TERMS OF REFERENCE AND MEMBERSHIP

National Advisory Committee – Terms of Reference

1. To advise on the conceptualisation, methods and implementation of the CRE research program;
2. To act as a source of expert advice on rural, remote and Indigenous health priorities, strategies and policies relevant to the research program;
3. To assist the research team with identification of, and access to, relevant statistical data and publications;
4. To work with the research team to develop and implement a research transfer strategy;
5. To facilitate communication with government and non-government organisations and their employees;
6. To comment on project outputs.

National Advisory Committee Membership 2011-2014

Name	Agency
Lou Andreatta	• Grant Service Division, Department of Health
Mark Booth	• Primary & Mental Health Care Division, Department of Health
Margaret Brown	• Health Consumers of Rural and Remote Australia Inc.
Ian Cameron	• NSW Rural Doctors Network
Adam Catchpole	• Mapping and Online Services, Workforce Distribution Branch, Department of Health
Linda Cutler	• CETI Rural Division • Royal Flying Doctor Service
Nicholas Duell	• Rural and Regional Health Australia ,Department of Health
Kirsty Faichney	• Department of Health
Terry Findlay	• Australian Primary Health Care Research Institute
Vicki Gordon	• Aboriginal Medical Services Alliance Northern Territory
Gordon Gregory	• National Rural Health Alliance Inc
Anthony Hobbs	• GP & Chair, External Reference Group developing Australia's first National Primary Health Care Strategy and • Therapeutic Goods Administration, Department of Health
Kerri Kellett	• Australian Primary Health Care Research Institute
James Lyons	• Rural and Regional Health Australia, Department of Health
Chips Mackinolty	• Aboriginal Medical Services Alliance Northern Territory
Lisa McGlynn	• Australian Institute of Health and Welfare
Peter McInnes	• Australian Primary Health Care Research Institute
Meredeth Taylor	• Rural and Regional Health Australia ,Department of Health
Robert Wells	• Australian Primary Health Care Research Institute
Mark Wenitong	• Apunipima Cape York Health Council

Meeting Dates of the National Advisory Committee

Meetings of the National Advisory Committee were held as follows:

- > Tuesday, 31 May 2011
- > Tuesday, 22 November 2011
- > Tuesday, 14 August 2012
- > Tuesday, 14 May 2013
- > Wednesday, 13 August 2014

APPENDIX 2: LIST OF STAKEHOLDER MEETINGS AND PRESENTATIONS, INCLUDING REFERENCE GROUP AND ROUND-TABLES

2014

1. **Carey TA** (2014). Using practice-based research to build effective and efficient psychological services. Presentation, Jocelyn Wade Seminar, James Cook University, 11 April 2014.
2. **Humphreys JS** (2014). Rural health research: some personal reflections. Presentation to the Department of Rural Health, University of Melbourne, Shepparton, 6 August 2014.
3. **Humphreys JS** (2014). Why rural communities should be concerned about their health, and how best to ensure timely and equitable access to appropriate health care at times of need? Presentation to the Shepparton Community, 6 August 2014.
4. **Humphreys JS & McGrail M** (2014). Using MABEL data to overcome the rural medical workforce shortage problem. Presentation to the MABEL Research Forum, Melbourne, 10 April 2014.
5. **Kirby S** (2014). Presentation to the Whole of Government Regional Network, organised by NSW Department Premier and Cabinet on the service-learning paper presented at the 2014 Primary Health Care Research Conference, NSW, 27 August 2014.
6. **Kirby S** (2014). Palliative End of Life Care Literature Review on patient/family/carer experience. Presentation to the Australian Rural Health Research Collaboration Governing Body, Broken Hill, 1 August 2014.
7. **Kirby S** (2014). Webex on service integration in COPD. Presentation to the NSW Agency for Clinical Innovation, 12 September 2014.
8. **Lavey L** (2014). Establishing multi-institutional collaborations – a Project Manager's perspective. Presentation to the Monash University School of Rural Health & La Trobe Rural Health School Boot Camp, 24 January 2014.
9. **McGrail M** (2014). Index of Access and the Monash Model: what can they do for rural health? Presentation to the CRERRPHC team, Churchill, 11 March 2014.
10. **McGrail M** (2014). GIS and Rural Health Policy Development: Lessons from Australia. Presentation to the Department of Geography, Northern Illinois University, Illinois, 7 November 2014.
11. **Saurman E** (2014). Improving access to emergency mental health care in the bush. Presentation to the School of Public Health PhD/MPhil Lunchtime Seminar, Broken Hill, 21 October 2014.
12. **Thomas S** (2014). Core primary health care services in rural and remote Australia: at what cost? Presentation to the CRERRPHC, Alice Springs, 15 July 2014.
13. **Wakeman J & Humphreys JS** (2014). What works to improve access to primary health care services in rural and remote Australia? Presentation to the Policy Roundtable, Commonwealth Department of Health, Canberra, 12 August 2014.
14. **Wakeman J, Humphreys JS, Lyle D, McGrail M & Lavey L** (2014). Access & equity in the provision of primary health care services in rural and remote Australia. Presentation to the CRERRPHC Team meeting, Canberra, 22 July 2014.
15. **Wakeman J, Humphreys JS, Lyle D & McGrail M** (2014). Access & equity in the provision of primary health care services in rural and remote Australia. Seminar presentation to the Commonwealth Department of Health, 12 August 2014.

16. **Wakerman J, Humphreys JS, Lyle D, McGrail M & Lavey L** (2014). Summary of accomplishments: increasing knowledge and influencing policy. Presentation to the CRERRPHC National Advisory Committee Meeting, Canberra, 13 August 2014.

2013

17. **Humphreys JS, Wakerman J, Lyle D, McGrail M & Kirby S** (2013). CRE Progress Report. Presentation to the CRERRPHC National Advisory Committee, Canberra, 14 May 2013.
18. **Kirby S** (2013). Service-learning in allied health in primary schools evaluation framework. Presentation to the Department of Education and Communities, Broken Hill, 25 November 2013.
19. **Kirby S** (2013). Service-learning in allied health in primary schools evaluation framework. Presentation to the School of Rural Health, The University of Melbourne, Shepparton, 25 November 2013.
20. **Kirby S** (2013). Service-learning in allied health in primary schools evaluation – ARC Grant application presentation. Presentation to the CRERRPHC community, Broken Hill, 26 November 2013.
21. **Kirby S** (2013). Nurse led diabetes care in remote Far West. Presentation to the Dean of Medicine, University of Sydney, Broken Hill, 18 July 2013.
22. **Lindeman MA** (2013). Contribution to workshop on prevalence of common conditions in old age such as dementia, falls, depression, chronic pain and incontinence. Presentation to Broome and Kununurra Indigenous communities and health professionals, Broome/Kununurra, 18 September 2013.
23. **Reeve C** (2013). Translating research into practice: Strengthening primary health care in the Fitzroy Valley. Presentation to Fitzroy Crossing health professionals, health services and council, Fitzroy Crossing, 8 March 2013.
24. **Saurman E** (2013). Mental Health Emergency Care – Rural Access Program: Patterns of Use. Presentation to the Mental Health Emergency Care Management, Orange, NSW, 19 April 2013.
25. **Saurman E & Lyle D** (2013). MHEC-RAP Workshop. Presentation to the Mental Health and Drug & Alcohol Service Western NSW Local Health District, Orange, NSW, 17 September 2013.
26. **Saurman E & Lyle D** (2013). MHEC-RAP Meeting. Presentation to the Western NSW Local Health District Executive, Orange, NSW, 1 October 2013.
27. **Thomas S** (2013). Oral presentation to the Health Development-Central Australia, Department of Health, Northern Territory, Alice Springs, 26 August 2013.
28. **Wakerman J & Humphreys JS** (2013). Policy Roundtable: What works to improve access to primary health care services to rural and remote Australia? Presented to the Policy Roundtable, Department of Health and Ageing, Canberra, 16 May 2013.
29. **Wakerman J & Humphreys JS** (2013). Access and equity in the provision of primary health care services in rural and remote Australia. Seminar presentation to the staff from the Department of Health and Ageing, Canberra, 16 May 2013.
30. **Wakerman J & Humphreys JS** (2013). Access & equity in the provision of primary health care services in rural and remote Australia. Presentation to the PHCRED evaluation team, Alice Springs, 14 October 2013.
31. **Ward B, Russell D, Saurman E & Thomas S** (2013). Presentations by CRERRPHC Postdoctoral Fellows & PhD students to the CRERRPHC National Advisory Committee Meeting, Canberra, 14 May 2013.

2012

32. **Kinsman L, Humphreys JS, Wakerman J, Perkins D, Lyle D & McGrail M** (2012). Access & equity in the provision of primary health care services in rural and remote Australia. Presentation to the APHCRI Centres of Research Excellence and Department of Health and Ageing, Canberra, 1 November 2012.
33. **Lyle D, Wakerman J & Knight S** (2012). Submission to the Standing Committee on Regional Australian – enquiry into the use of FIFO and DIDO workforce practices in regional Australia, Commonwealth Government, Melbourne, 1 June 2012.
34. **Reeve C, Wakerman J & Humphreys JS** (2012). Translating Research into Practice: Best Practice Primary Health Care Models. Presentation to health professionals, health service providers and government, Broome and Fitzroy Crossing, 12 May 2012.
35. **Reeve C, Wakerman J & Humphreys JS** (2012). Translating Research into Practice: Evaluation of the Fitzroy Valley Health Service partnership model. Presentation to health professionals, health service providers and government, Broome, 11 September 2012.
36. **Wakerman J, Humphreys JS, Kinsman L, McGrail M & Perkins D** (2012). Presentation to the CRERRPHC National Advisory Committee Meeting, Canberra, 14 August 2012.
37. **Wakerman J, Lyle D, McGrail M, Perkins D & Kinsman** (2012). The CRE: Findings, Challenges and future directions. Presentation to state workforce agencies, Universities (national/international), community health organisations and Department of Health and Ageing, Bendigo, 12 July 2012.

2011

38. **Humphreys JS** (2011). Resolving the rural medical workforce crisis – translating evidence into policy. Presentation to the Australian Government politicians and Rural Doctors Association of Australia, Canberra, 23 March 2011.
39. **Humphreys JS** (2011). Invited presentation: Retaining rural health workers: translating evidence into policy. Presentation to the Victorian Department of Health Better Skills Best Care Breakfast Seminar, Melbourne, 24 May 2011.
40. **Humphreys JS** (2011). Rural health workforce retention in Victoria: Translating evidence into policy, Bendigo, 12 August 2011.
41. **Humphreys JS, Wakerman J, Perkins D & McGrail M** (2011). Presentation to the 2nd meeting of the CRERRPHC National Advisory Committee, Canberra, 22 November 2011.
42. **Humphreys JS, Wakerman J, Perkins D, Lyle D & McGrail M** (2011). Access & equity in the provision of primary health care services in rural and remote Australia. Presentation to the Department of Health and Ageing, Canberra, 23 November 2011.
43. **Humphreys JS, Wakerman J, Perkins D, Lyle D & McGrail M** (2011). Presentation to the 1st meeting of the CRERRPHC National Advisory Committee, Canberra, 31 May 2011.

APPENDIX 3: EVALUATION FEEDBACK FROM PRESENTATIONS

Evaluation feedback from Department of Health and Ageing Roundtable, 12 August 2014, 2.00-3.30pm - What works to improve access to primary health care in rural and remote Australia (Professors John Humphreys & John Wakerman).

(Number of attendees: 16; Number of responses: 7; Response rate: 44%)

1. I had **good general knowledge** of the topic before attending this roundtable

General knowledge	Total
3 Neutral	2
4 Agree	4
5 Strongly Agree	1
Grand Total	7

2. The content of this roundtable **confirmed my existing knowledge** on the topic

Confirmed knowledge	Total
3 Neutral	1
4 Agree	3
5 Strongly Agree	3
Grand Total	7

3. The content of this roundtable **broadened my knowledge** of the topic

Broaden Knowledge	Total
1 Strongly Disagree	1
2 Disagree	
3 Neutral	2
4 Agree	2
5 Strongly Agree	2
99 No response	
Grand Total	7

4. The content of this roundtable ***stimulated my thinking*** on the topic

Stimulated Thinking	Total
1 Strongly Disagree	
2 Disagree	
3 Neutral	1
4 Agree	5
5 Strongly Agree	1
Grand Total	7

5. I may be able to ***use knowledge gained*** from this roundtable in my job

May use knowledge	Total
3 Neutral	2
4 Agree	4
5 Strongly Agree	1
Grand Total	7

6. The content of this roundtable ***is directly applicable*** to my job

Directly Applicable	Total
1 Strongly Disagree	
2 Disagree	1
3 Neutral	
4 Agree	4
5 Strongly Agree	2
99 No response	
Grand Total	7

Evaluation feedback from Department of Health and Ageing Seminar, 12 August 2014, 12.30-1.30pm - Access and equity in the provision of primary health care in rural and remote Australia (Professors John Humphreys & John Wakerman).

(Number of attendees: 46; Number of responses: 35; Response rate: 76%)

1. I had **good general knowledge** of the topic before attending this seminar

General knowledge	Total
2 Disagree	6
3 Neutral	9
4 Agree	18
5 Strongly Agree	2
Grand Total	35

2. The content of this seminar **confirmed my existing knowledge** on the topic

Confirmed knowledge	Total
2 Disagree	5
3 Neutral	11
4 Agree	15
5 Strongly Agree	3
99 No response	1
Grand Total	35

3. The content of this seminar **broadened my knowledge** of the topic

Broaden Knowledge	Total
1 Strongly Disagree	1
2 Disagree	2
3 Neutral	4
4 Agree	11
5 Strongly Agree	16
99 No response	1
Grand Total	35

4. The content of this seminar ***stimulated my thinking*** on the topic

Stimulated Thinking	Total
1 Strongly Disagree	
2 Disagree	2
3 Neutral	1
4 Agree	14
5 Strongly Agree	18
Grand Total	35

5. I may be able to ***use knowledge gained*** from this seminar in my job

May use knowledge	Total
1 Strongly Disagree	1
2 Disagree	3
3 Neutral	8
4 Agree	12
5 Strongly Agree	10
99 No response	1
Grand Total	35

6. The content of this seminar ***is directly applicable*** to my job

Directly Applicable	Total
1 Strongly Disagree	1
2 Disagree	2
3 Neutral	13
4 Agree	6
5 Strongly Agree	11
99 No response	2
Grand Total	35

APPENDIX 4: FINAL SURVEY – HEALTH CARE ACCESS



Centre of Research Excellence in Rural and Remote Primary Health Care

Access to Health Care in Small Rural Communities

This survey is seeking information about access to, and the use of, doctors (general practitioners) by people in your community. The study is being conducted by staff from the *Centre of Research Excellence in Rural and Remote Primary Health Care (CRE)* at Monash University School of Rural Health in Bendigo.

This questionnaire will only take 10 – 15 minutes to complete. Your participation in this survey is entirely voluntary. Please complete only one questionnaire per household.

All information you provide will be treated confidentially. Survey responses will be analysed and presented so that it will not be possible to identify any individual responses. The results of the survey will be available on the CRE website (www.crerrphc.org.au) in 2013.

If you have any queries relating to this survey, please do not hesitate to contact Dr Bernadette Ward on telephone (03) 5440 9064 or 0427 059 205. Thank you for your time.

SECTION 1 – YOUR HEALTH

1. In general, would you say that your health is: *(please tick one)*



Excellent

☐

Very Good

☐

Good

☐

Fair

☐

Poor

☐

SECTION 2 – VISITS TO A DOCTOR

2. When was the last time you visited a doctor (GP) about your own health? *(please tick one)*

During the last month

☐

Between 1 and 3 months ago

☐

Between 3 and 12 months ago

☐

More than 12 months ago

☐

Don't know

☐

3. a. How far do you normally travel to visit a doctor (GP)?

..... Distance in kilometres

b. How long does it normally take you to travel to visit a doctor (GP)?

..... Time in minutes

4. a. Do you have a usual doctor (GP) who you visit?

☐ Yes

Go to question 4b

☐ No

Go to question 5

b. If yes, what is the name of the town where your usual GP is located?

..... Name of Town of usual GP

5. Is the GP you visit the closest one to your home?

☐ Yes

Go to question 7

☐ No

Go to question 6

☐ Don't know Go to question 7

6. If you travel to a GP who is not the closest one to your home, what is the reason for travelling further? (please tick all that apply)

☐ Combine appointment with other activity (eg. shopping, visiting friends or family)

☐ Convenient to my work location

☐ Like the doctor

☐ Doctor knows my medical history

☐ Easy to get appointment

☐ Large practice that includes other health professionals

☐ Cost of consultation

☐ Other factor (Please specify)

7. How do you usually travel to your GP? (please tick one)

☐ Private vehicle is always available when needed

☐ Private vehicle driven by some other family member, neighbour or friend

☐ Public transport (train, bus service including school bus)

☐ Walk

☐ Other (please specify)

SECTION 3 – ACCESS TO A DOCTOR FOR A NON-EMERGENCY CONSULTATION

8. If you need to see a GP for something that wasn't an emergency, what is the maximum time that you are prepared to travel to get there?

..... Maximum time in minutes

9. Thinking about yourself, which factor in each pair is the most important when you decide to visit a doctor for a non-emergency consultation?

(FOR EACH PAIR, TICK WHICH ONE OF THE TWO ALTERNATIVES YOU THINK IS MORE IMPORTANT)

Availability of a GP	<input type="checkbox"/>	OR	Cost to visit a GP	<input type="checkbox"/>
Seeing a GP you prefer	<input type="checkbox"/>	OR	Availability of a GP	<input type="checkbox"/>
Cost to visit a GP	<input type="checkbox"/>	OR	Distance to travel to a GP	<input type="checkbox"/>
Availability of a GP	<input type="checkbox"/>	OR	Distance to travel to a GP	<input type="checkbox"/>
Seeing a GP you prefer	<input type="checkbox"/>	OR	Cost to visit a GP	<input type="checkbox"/>
Distance to travel to a GP	<input type="checkbox"/>	OR	Seeing a GP you prefer	<input type="checkbox"/>

10. a. Is accessing a GP ever a problem for you?

- ☐ Yes **Go to question 10b**
☐ No **Go to question 11**

b. What is the problem?

.....
.....

11. In the last 12 months, have you ever put off seeing a GP because you could not get an appointment?

- ☐ Yes
☐ No

SECTION 4 – ABOUT YOU

12. Are you male or female? (please tick one)

- ☐ Male
☐ Female

13. How old are you? (please tick one)

- ☐ 18-24
☐ 25-34
☐ 35-44
☐ 45-54
☐ 55-64
☐ 65-74
☐ 75+

14. Your place of residence:

a. If you live in a town, please indicate its name and its postcode

..... Name of town

..... Postcode of town

b. If you live outside of a town, please indicate how many kilometres from the nearest town and the name of that town

..... Kilometres from nearest town

..... Name of nearest town

15. How many years have you lived at your current address?

..... Years

16. How many registered motor vehicles are garaged at this address? (Exclude motorbikes, scooters, tractors etc)

.....

17. How many people live at this address?

..... Adults

..... Children under the age of 18

18. What is your current occupation?

.....

19. Is there anything else you would like to tell us about accessing a doctor or other health service?

.....

.....

That concludes this survey. Thank you very much for your participation


If you would be willing to participate in a follow-up telephone interview to provide more detailed information about your use of health services, please write your name and telephone number below.

Name: Telephone:

Please place the completed survey in the postage-paid envelope and return it to:

Dr Bernadette Ward
Monash University School of Rural Health
PO Box 666
Bendigo Vic 3552

APPENDIX 5: BENCHMARKING SURVEY INSTRUMENT



SURVEY

**Equity of Access to Primary Health Care Services
in Rural and Remote Australia:**

**Developing funding benchmarks to ensure sustainable,
high quality rural and remote practices**

A study by the Centre of Research Excellence in Rural and Remote Primary Health Care

John Wakerman, Susan Thomas, John Humphreys

2014

Address for correspondence:
Dr Susan Thomas
Centre for Remote Health
PO Box 4066
ALICE SPRINGS NT 0871
*marked confidential

Telephone 08 8951 4712
s.thomas@flinders.edu.au
www.cremh.org.au

**Equity of Access to Primary Health Care Services in Rural and Remote Australia:
Developing funding benchmarks to ensure sustainable, high quality rural and remote practices**

Thank you for agreeing and taking the time to participate in this important research. The Centre of Research Excellence in Rural and Remote Primary Health Care is undertaking research on how to provide equitable access to sustainable, high quality primary health care services for residents of non-metropolitan Australia. Our purpose is to ensure the resources necessary to provide sustainable, high quality care are available and allocated equitably to different rural and remote communities in Australia.

To achieve this, we are collecting data about the costs associated with operating a high quality primary health care practice such as yours. Because costs vary according to the size and location of practices, we are surveying a sample of high performing practices from all States and Territories.

Ethics approval for this project has been granted by the Central Australian Human Research Ethics Committee. Your participation in this survey is entirely voluntary, and you may withdraw your participation at any time.

All information will remain entirely confidential. The responses to this survey will be analysed and presented such that it will not be possible to identify individuals or practices.

If you have any concerns or questions please contact any member of our research team whose contact details appear below. Thank you for your time.

Susan Thomas	s.thomas@flinders.edu.au	08 8951 4712 / 0433 708 012
John Wakerman	john.wakerman@flinders.edu.au	08 8951 4700 / 0417 884 182
John Humphreys	john.humphreys@monash.edu	03 5440 9081 / 0417 551 494

Central Australian Human Research Ethics Committee Secretariat
Project HREC-12-57
08 8951 4700

Practice Details

Practice name:				
Address:				
Phone:				
Email:				
Hours of operation:	Monday – Friday	From:	To:	
	Saturday	From:	To:	
	Sunday	From:	To:	
	Public Holidays	From:	To:	
Service functions:	Please tick all applicable: <input type="checkbox"/> Outreach (such as to other smaller communities in your catchment) <input type="checkbox"/> Home visiting <input type="checkbox"/> On-call (undertaken out of normal hours)			
Service utilisation:	• How many patients are currently registered with this practice? <div style="border: 1px solid black; height: 20px; width: 100%;"></div>			
	• How many patients have attended this practice at least once in the last financial year ending 30 June 2013? <div style="border: 1px solid black; height: 20px; width: 100%;"></div>			
	• What was the total number of consultations provided in the last financial year ending 30 June 2013? <div style="border: 1px solid black; height: 20px; width: 100%;"></div>			

Type of Service:	<input type="checkbox"/> Sole GP <input type="checkbox"/> Group GP <input type="checkbox"/> ACCHS <input type="checkbox"/> Multi-Purpose Service (MPS) <input type="checkbox"/> Other
Model of Service:	<input type="checkbox"/> Discrete (walk-in/walk-out) <input type="checkbox"/> Integrated (shared care, primary health care teams, multi-purpose services) <input type="checkbox"/> Comprehensive PHC (ACCHS) <input type="checkbox"/> Outreach (hub-and-spoke, visiting service, FIFO/DIDO)

Human Resources

Please indicate the number of staff currently employed in this practice, and any funded vacancies.

Professional Category	Number	Number of Full-time Equivalents	Number of Funded Vacancies
Doctor			
Registered Nurse			
Nurse Practitioner			
Midwife			
Enrolled Nurse			
Aboriginal Health Worker			
Audiologist			
Dietitian			
Occupational Therapist			
Optometrist			
Oral/Dental Health Practitioner			
Pharmacist			
Physiotherapist			
Podiatrist			
Psychologist			
Social Worker			
Speech Pathologist			
Other			
Practice Manager			
Administration/clerical staff			
Other (please specify)			

Annual Costs

Please provide data for the last financial year ending 30 June 2013.

Resources	Annual Operating Costs \$
Human Resources (Please include PAYG wages, salaries or contract package for each category of staff, including 'on costs')	
• Doctors	
• Nurses	
• Aboriginal Health Workers	
• Allied Health Practitioners	
• Managers	
• Admin/Clerical staff	
• Expenditure for locums and short term agency staff	
• Other	
Professional Development (Please include all expenses associated with orientation, training, seminars, conferences, related travel, professional membership)	
Recruitment (Please include all expenses associated with travel, housing support, relocation)	
Communications (Please include all expenses associated with telephone, mobile phone, fax, photocopier, video conference facilities, IT support)	
Vehicle Operation (Please include all expenses associated with fuel, registration, insurance, maintenance, profit/loss on sale, allowances, subsidies)	
Buildings (Please include all expenses associated with insurance, maintenance, cleaning services utilities)	
Drugs, Supplies, Medical Consumables and Equipment (Please include all expenses associated with pharmaceuticals)	
Accounting/Legal/Medical insurance expenses	
Other expenses	

Capital Costs and Depreciation

1. Is the land and building from which the practice operates owned by the practice or leased?

☐ Owned by the practice.

☐ Leased

☐ Other, please describe: _____

2. Please estimate the square meters of building space from which the practice/service operates _____

3. For the last financial year ending 30 June 2013 please provide details of the amounts recorded in depreciation or leases for the following resources?

Resource	Depreciation (if the practice is owned) \$	Cost of Lease \$
Building*		
Motor vehicles		
Computer/information technology equipment		
Other equipment (including medical equipment)		
Other		
Total		

*Include depreciation for leasehold improvements (eg. associated with fit-outs) in building depreciation.

Primary Health Care Services

Please indicate with a tick (✓) whichever of the following applies - whether your practice provides each of the following services directly by resident staff, whether it uses visiting services to provide them, if other services provide them or whether they are not available in your community. Indicate if current service availability is adequate for community needs.

Service Category	PHC Services	Yes we provide this service directly using resident staff	This service is provided by visiting services (e.g. GPs, nurses, CHC, support, visiting professionals)	This service is provided by others in the community (e.g. CHC, support, visiting professionals)	Current service availability is adequate for community need
Care of the Sick and Injured	24 hour care, resuscitation and emergency care Treatment of injury and poisoning Radiology Access to essential medicines Patient advocacy Counselling				
Mental Health Services	Drug and alcohol treatment Drug and alcohol care Child and adolescent care Immunisation				
Maternal and Child Health	Audiology Dietetics Occupational therapy Optometry Physiotherapy Podiatry Psychology Counselling/social work/family violence Speech pathology Aged care and disability services Palliative care				
Allied Health					

Service Category	PHC Services	Does your practice provide this service directly using resident staff?	This service is provided by other health care providers in the community (e.g., CHC, hospital, visiting professionals)	This service is not provided in our community	Current service is adequate for community needs
Sexual and Reproductive Health	STI and blood borne viruses				
Rehabilitation	Family planning				
	After trauma				
	Post CVA				
Oral/Dental Health	Alcohol and other drug rehab				
	Immunisation				
	Chronic disease control				
	Targeted population/health promotion programs				
	Screening programs				
	Youth programs				
	Well men's and women's services				
	Advocacy				
Public Health/Injury Prevention					

Questions for Practice Principal

- We would like to begin by validating the key information provided on the questionnaire:
 - Staffing
 - Costs (are these from tax documents, payroll, estimates?)
 - Number of patients registered and number of consultations in the last year
 - Services provided, not provided
- We would like to know the population size that your practice serves
 - What is the population covered by this primary health care service?
 - What is the geographical catchment area of this practice? (include the names of other communities served by this practice?)
 - Are there any specific needs in your catchment area that affect the costs of providing primary care services? (community needs, mobility, socio-economic, cultural, other practices)
- Your practice has been identified as one that provides high quality care to patients. What are the essential requirements for ensuring your practice continues to maintain a high level of quality care?
- What barriers has this practice faced in providing a high quality service and how have you addressed them?
- Are there any other comments you would like to make in relation to providing high quality, sustainable primary health care services in this area?

Thank you for your participation

APPENDIX 6: LIST OF CONFERENCE PRESENTATIONS

2014

1. **Chisholm M** (2014). *Life with Dementia: Relations*, presentation at the 2nd International Conference for the Centre for Dementia Research (CEDER), Linköping University, Norrköping, Sweden, 15-17 October 2014.
2. **Chisholm M** (2014). *Making Research Matter*, presentation at the 13th National Conference of Emerging Researchers in Ageing, Adelaide, 24-25 November 2014.
3. **Chisholm M** (2014). *50 Not Out: aiming for a century!*, presentation at the 47th Australasian Association of Gerontology National Conference, Adelaide, 26-28 November 2014.
4. **Guthridge S** (2014). *50 years in the making – NT health information, 1967-2014*. Invited speaker at the Mt Isa Centre for Rural and Remote Health (MICRRH) Conference – Are you remotely interested?, Mt Isa, 31 July to 1 August 2014.
5. Johnston J, Hindman J & **Saurman E** (2014) *Mental Health Emergency Care by Telehealth in Western NSW*. Invited oral presentation at the RANZCP Congress, Perth, 11-15 May 2014.
6. **Kirby S** & Cummins C (2014). *Lost in translation: getting PHC research into evidence*. Oral presentation at the NSW Rural Health and Research Progress 2014 – ‘Rural Health Horizons – Shaping our Future’, Dubbo, NSW, 9 September 2014.
7. **Kirby S**, Brunero C, Hill D, Merritt J, Jones D & **Lyle D** (2014). *Two birds with one stone: rural health inequities and better student learning*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
8. **Lindeman MA & Grant L** (2014). *Experiences of Central Australian workers regarding suicide risk among Aboriginal youth*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
9. **Lindeman MA**, Jensen H, Bell D & Farthing A (2014). *A ‘key worker’ model to improve service pathways for Aboriginal people with dementia in remote Central Australia*. Oral presentation at the Services for Australian Rural and Remote Allied Health (SARRAH) National Conference, Kingscliff, NSW, 17-20 September 2014.
10. **McGrail M & Humphreys JS** (2014). *A new Index of Access and the Monash Model: two ‘fit-for-purpose’ measures for rural workforce planning and resource allocation*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
11. **Meade C & Ward B** (2014). *Improving access to general practice care in residential aged care facilities*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
12. **Reeve C** (2014). *The Inequity of Equality*. Invited keynote presentation at the Rural Medicine Australia 2014 Conference, Sydney, 30 October - 1 November 2014.
13. **Reeve C** (2014). *Exposure to public health – a pathway to social accountability*. Oral presentation at The Global Community Engaged Medical Education Muster, Uluru, NT, 27-30 October 2014.
14. **Roberts D, Ward B & Russell D** (2014). *Health outcomes associated with a rural diabetes self-management program*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
15. **Russell D, Humphreys JS, McGrail M**, Cameron I & Williams P (2014). *The value of survival analysis for evidence-based rural medical workforce planning*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
16. **Saurman E**, Johnston J, Hindman J, **Kirby S & Lyle D** (2014). *Improving access to emergency mental health care in the bush*. Poster presentation to the Success and Failure in Telehealth Conference, Adelaide, November 2014.
17. **Thomas S, Wakerman J & Humphreys JS** (2014). *Population thresholds for primary health care services in rural and remote Australia*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.

18. **Thomas S, Zhao Y, Guthridge S & Wakerman J** (2014). *Evaluating the costs and health outcomes associated with primary care utilisation for Indigenous Australians with diabetes in remote Northern Territory communities*. Oral presentation at the 2nd International Primary Health Care Reform Conference, Brisbane, 17-19 March 2014.
19. **Ward B, Humphreys JS & McGrail M** (2014). *How different aspects of access influence rural Australians decision to utilise a general practitioner*. Oral presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.
20. **Zhao Y, Thomas S, Guthridge S & Wakerman J** (2014). *Better health outcomes at lower costs: the benefits of primary care utilisation for chronic disease management in remote Indigenous communities in Australia's Northern Territory*. Poster presentation at the 2014 Primary Health Care Research Conference, Canberra, 23-25 July 2014.

2013

21. Berends L, **Buykx P**, Room R & Lubman DI (2013). *Research to inform alcohol and other drug system design and development in a climate of change*, Oral presentation at the 8th Health Services and Policy Research Conference, Wellington, New Zealand, 2-4 December 2013.
22. **Carey TA** (2013). *The method of levels: A transdiagnostic approach to effective and efficient patient-centred treatment in rural and remote Australia*. Workshop at the 48th Annual Conference of the Australian Psychology Society, Cairns 8-12 October 2013.
23. **Humphreys JS** (2013). *Achieving change through research: How rural doctors are leading the way*, Invited presentation at the Rural Medicine Australia 2013 Conference, Cairns, 31 October - 2 November 2013.
<http://webcast.gigtv.com.au/Mediasite/Catalog/catalogs/RM2013>
24. **Jones M**, Bushnell J & **Humphreys JS** (2013). *Influence of medical program placements on medical graduates' attitudes to rural practice: a national study based on the MSOD project*. Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July, 2013.
25. **Jones M, Humphreys JS & Bushnell J** (2013). *Clinical placements and graduate attitude to in-need medical disciplines*. Oral presentation at the Health Workforce Australia 2013 Conference, Adelaide, 18-20 November 2013.
26. **Jones M**, Wilson I & Eley D (2013). *Medical training and the point of conception of a rural doctor: a longitudinal study based on the MSOD project*. Oral presentation at the 12th National Rural Health Conference, Adelaide, 7-10 April 2013.
27. **Kirby S**, McCarron T, Moore M, Johnson P, **Perkins D & Lyle D** (2013). *Does nurse-lead diabetes care work in the remote locations?* Poster presentation at the Rural Health Congress, Port Macquarie, October 2013.
28. **Kirby S**, McCarron T, Moore M, Jonson T, **Perkins D & Lyle D** (2013). *Managing sugar in the bush*. Poster presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
29. **Kirby S, Perkins D & Lyle D** (2013). *How can we make education, training and supervision interventions more effective for recruitment and retention in the rural and remote primary health care workforce?* Poster presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.

30. **Lindeman MA**, Dingwall KM, Bell D (2013). *"If you don't have that knowledge you don't ask that question". Staff readiness for conducting assessments in remote Indigenous community contexts*. Oral presentation at the 10th National Allied Health Conference, Brisbane, 16-18 October 2013.
31. **Lindeman MA**, Taylor KA, Dingwall KM, Lopes J, Reid J & Grant L (2013). *Towards systematic data collection and referral pathways for Indigenous youth suicide attempts*. Oral presentation at the 12th National Rural Health Conference, Adelaide, 7-10 April 2013.
32. **McGrail & Humphreys JS** (2013). *Understanding the dynamics of rural GP mobility: who moves where and why?* Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
33. **McGrail M & Humphreys JS** (2013). *Development of a National Index of Access for rural primary health care*. Oral presentation at the 8th Health Services and Policy Research Conference, Wellington, New Zealand, 2-4 December 2013.
34. **Perkins D** (2013). *The Australian Rural Mental Health Cohort Study: Implications for policy and practice*. Oral presentation at the 12th National Rural Health Conference, Adelaide, 7-10 April 2013.
35. **Perkins D** (2013). *The Australian Rural Mental Health Cohort Study: key learnings*. Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
36. **Reeve C** (2013). *Prevocational exposure to public health - a pathway to rural, remote and public health practice*, Oral presentation at the RACP NT ASM and CARPA Conference, Alice Springs, 8-9 November 2013.
37. **Reeve C** (2013). *Strengthening Primary Health Care*, Oral presentation at the RACP NT ASM and CARPA Conference, Alice Springs, 8-9 November 2013.
38. **Russell D, Wakerman J & Humphreys JS** (2013). *How long will you stay?* Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
39. **Saurman E, Lyle D & Perkins D** (2013). *Use of the MHEC-RAP by Hospital Emergency Departments*. Oral presentation at the 12th National Rural Health Conference, Adelaide, 7-10 April 2013.
40. **Sirrett D** (2013). *Fly-in, Fly-out health workforce models*. Oral presentation at the RACP NT ASM and Central Australian Rural Practitioners Association Conference, Alice Springs, 8-9 November 2013.
41. **Spooner C & Lavey L** (2013). *Establishment of multi-institutional centres of research excellence – tips for new players*. Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
42. **Thomas S, Wakerman J & Humphreys JS** (2013). *Access to core primary health care services in rural and remote Australia*. Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.
43. **Wakerman J, Bourke L & Humphreys JS** (2013). *Is remote health different to rural health?* Oral presentation at the 12th National Rural Health Conference, Adelaide, 7-10 April 2013.
44. **Wakerman J** (2013). *Health Reform Panel Discussion. Facilitator at the What's new in health and health reform: RACP NT ASM and CARPA Conference*, Alice Springs, 8-9 November 2013.
45. **Ward B, Humphreys JS, Russell D, Chisholm M, McGrail M, Buykx P & Wakerman J** (2013). *The impact of primary health care access on utilisation and health outcomes: Implications for policy in rural and remote areas*. Oral presentation at the 2013 Primary Health Care Research Conference, Sydney, 10-12 July 2013.

2012

46. Bell D, **Lindeman, MA** & Reid JB (2012). *Needs assessment and aged care outcomes for remote-based Aboriginal people*. Paper presented at the Australian Association of Gerontology National Conference, Brisbane 2012. Australasian Journal on Ageing, vol.31 Supplement 2, December 2012, p4.
47. **Humphreys J** (2012). *Health workforce planning and the provision of primary health care services in rural and remote Australia*. Keynote speaker at the Leading the way in rural health reform, Inspire 2012 Conference Health Workforce Australia, Melbourne 13-14 November 2012.
48. Jensen H, LoGiudice D, Smith K, **Lindeman MA**, Flicker L, Atkinson D (2012). *Pathways to care for Indigenous people with dementia in Central Australia*. Services for Australian Rural and Remote Allied Health (SARRAH), Launceston, 20-23 September 2012.
49. **Kinsman L** (2012). *Never Underestimate the Impact of Policy*, presentation at the International Primary Health Care Reform Conference, Brisbane 5-7 March 2012.
50. **Lindeman M** (2012). *Recognising and responding to dementia in Indigenous communities*. Workshop offered 3 times in 2012: 29-30 March in Alice Springs 2012; 18-19 September 2012 in Launceston (as a pre-conference workshop of the SARRAH conference); 8-9 October 2012 in Port Augusta.
51. **Lindeman MA**, Bell D, Reid JB (2012). *How effectively do aged care assessment processes translate into real needs-based care in remote Aboriginal communities of Central Australia?* PHC Research Conference Inform, influence, implement: Research improving policy and practice; Canberra, 18-20 July 2012.
52. **Lindeman MA** & Jensen H (2012). *Dementia in Indigenous communities: a 'knowledge-to-action' professional development program for remote practitioners*. Services for Australian Rural and Remote Allied Health (SARRAH), Launceston, 20-23 September 2012.
53. **Lindeman MA** & Reid JB (2012). *Researching aged and dementia care in Central Australian Indigenous communities*. Invited paper presented at the 3rd National Workshop of the Australian Association of Gerontology Aboriginal and Torres Strait Islander Ageing Committee (AAG ATSIAC), Brisbane, 19 November 2012.
54. **Lyle D** & Jones D (2012). *Enhancing what is spoken in Broken Hill*, presentation at the Inspire 2012 Conference, Health Workforce Australia, Melbourne, 13-14 November 2012.
55. **McGrail MR** & **Humphreys JS** (2012). *Formulating a more appropriate and equitable system for allocating rural and remote health workforce incentives*, Primary Health Care Research Conference, Canberra, 18 July 2012.
56. **Perkins D** & **Kirby S** (2012). *Review of Education, Training and Supervision Models in Rural and Remote Primary Health Care*, NSW Rural Health & Research Congress, Wagga, 5-7 November 2012.

2011

57. **Carey TA** (2011). *Improving access by changing perspective: A focus on "how" rather than "what"*. Paper presented at the annual conference of the British Association of Behavioural and Cognitive Psychotherapies (BABCP). Surrey, England.
58. **Carey TA** (2011). *The untapped potential of primary care psychology – A Scottish case study*. Paper presented at the annual conference of the Australian Psychological Society. Canberra, Australia.
59. **Humphreys JS** (2011). *Sustaining rural health services and improving community well-being through research: lessons from Elmore*, Keynote Address at the Rural Health Research Colloquium – Sustaining Rural Health through Research', 12th October, Dubbo, NSW.

60. **Humphreys JS, Wakerman J, Perkins D, Lyle D, McGrail M & Kinsman L** (2011). *Centre of research excellence in Rural and Remote Primary Health Care*, 2011 PHC Research Conference - 'Inspirations, Collaborations, Solutions', Brisbane, 14 July 2011.
61. **Lindeman MA** (2011). *Recognising and responding to dementia in Indigenous communities: integrating research findings into a professional development program*. Paper presented at the Connecting young and old: connecting generations. AIATSIS National Indigenous studies conference, Canberra, 19-22 September 2011.
62. **Lindeman MA, Taylor KA, & Stothers K** (2011). *It's all about good intercultural communication: dementia awareness in Indigenous communities*. Paper presented at the 9th Asia/Oceania Regional Congress of the International Association of Gerontology and Geriatrics, Melbourne. 23-27 October 2011.
63. **Lindeman MA** (2011)). *The Northern Territory program: a focus on capacity building and community responsiveness*. Paper presented at the PHCRED Tri-State Conference, Adelaide. 15-16 September 2011
64. **Wakerman J** (2011). *The Policy process*. Invited paper to Global Health Conference, Sydney, July 2011.
65. **Wakerman J** (2011). *The Policy process*. Invited paper to National Rural Leadership Development Seminar, Victor Harbour, 6 August 2011.

APPENDIX 7: LIST OF PEER-REVIEWED PUBLICATIONS

CRERRPHC journal articles submitted for review

1. **Carroll V, Reeve C, Wakerman J & Humphreys JS** Re-orienting a remote acute care model towards a primary health care approach: key enablers, *Rural and Remote Health*.
2. **Chisholm M, Buykx P, Walker J & Snow P** More than availability: access to dementia care and support services in rural communities, *Ageing and Society*.
3. **Flouris A, Crane P & Lindeman MA** Youth programs in remote Indigenous communities: context matters, *Rural Society*.
4. **Kirby et al** People living in remote communities can have best-practice diabetes care, *Rural and Remote Health*.
5. **Kirby et al** Student led speech pathology and occupational therapy in preschools and primary schools: Report of a service-learning program in rural and remote Australia.
6. **McGrail M & Humphreys JS** Geographical mobility of general practitioners in rural Australia, *Medical Journal of Australia*.
7. **McGrail M, Humphreys JS & Ward B** Accessing doctors at times of need – measuring the distance tolerance of rural residents for health-related travel, *BMC Health Services Research*.
8. **Saurman E, Kirby S & Lyle D** No longer 'flying blind', how access has changed emergency mental health care in emergency departments, a qualitative study, *BMC Health Services Research*.

CRERRPHC journal articles in press

9. **Gausia K, Thompson S, Perkins D, Lindeman MA, Brown L & Ramsay J** (in press). The contribution of University Departments of Rural Health to rural health research: an analysis of outputs, *Australian Journal of Rural Health*.
10. **Kirby S, Moore, McCarron, Johnson, Perkins D & Lyle D** (accepted for publication), *Canadian Journal of Rural Medicine*.
11. **Reeve C, Wakerman J & Humphreys JS** Strengthening primary health care, *Medical Journal of Australia*.
12. **Thomas S, Williams K, Ritchie J & Zwi K** (in press). Improving paediatric outreach services for urban Aboriginal children through partnerships: views of community based service providers', *Child: Care, Health and Development*.

Recent CRERRPHC published journal articles accepted in 2014 and published early in 2015:

13. **Reeve C, Humphreys JS, Wakerman J, Carroll V, Carter M, O'Brien T, Erlank C, Mansour R & Smith B** (2015). Community participation in health service reform: the development of an innovative remote Aboriginal primary health care service, *Australian Journal of Primary Health*, online early. <http://dx.doi.org/10.1071/PY14073>

14. Bell D, **Lindeman MA** & Reid JB (2014). The (mis)matching of resources and assessed need in remote Aboriginal community aged care, *Australasian Journal on Ageing*. Online early: <http://onlinelibrary.wiley.com/doi/10.1111/ajag.12164/pdf>
15. Chondur R, Li SQ, **Guthridge S** & Lawton P (2014). Does relative remoteness affect chronic disease outcomes? Geographic variation in chronic disease mortality in Australia, 2002-2006, *Australian and New Zealand Journal of Public Health*, 38(2): 117-121. <http://onlinelibrary.wiley.com/doi/10.1111/1753-6405.12126/pdf>
16. Dingwall KM, **Lindeman MA** & Cairney S (2014). "You've got to make it relevant": barriers and ways forward for assessing cognition in Aboriginal clients, *BMC Psychology*, 2(13): 1-11. www.biomedcentral.com/2050-7283/2/13
17. Gador-Whyte AP, **Wakerman J**, Campbell D, Lenthall S, Struber J, Hope A & Watson C (2014). Cost of best-practice primary care management of chronic disease in a remote Aboriginal community, *Medical Journal of Australia*, 200(11): 663-666. www.mja.com.au/journal/2014/200/11/cost-best-practice-primary-care-management-chronic-disease-remote-aboriginal
18. **Jones M**, Bushnell JA & **Humphreys JS** (2014). Are rural placements positively associated with rural intentions in medical graduates?, *Medical Education*, 48(4): 405-416. <http://onlinelibrary.wiley.com/doi/10.1111/medu.12399/abstract>
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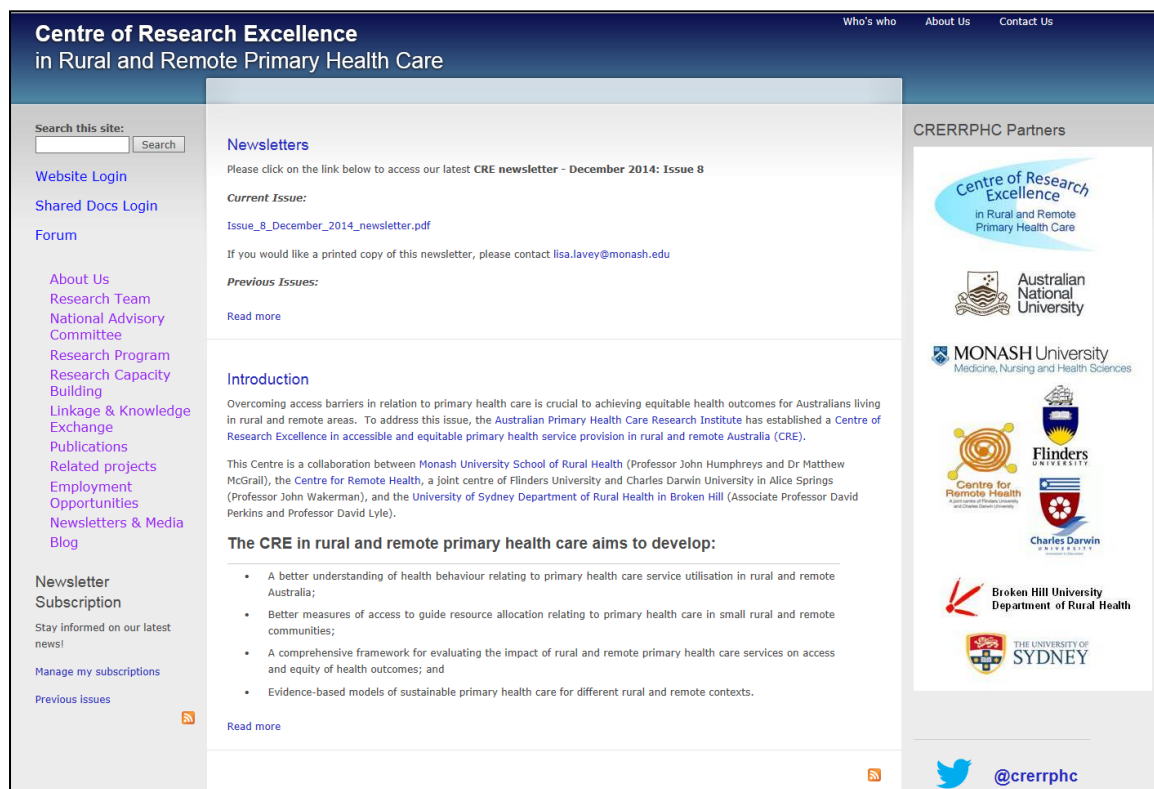
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APPENDIX 8: WEBSITE DETAILS AND FRONTISPIECE

Website address: www.crerrphc.org.au





Centre of Research Excellence
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Newsletter of the

Centre of Research Excellence in Rural and Remote Primary Health Care

Issue 1: November 2012

Editorial

John Wakeman

The Centre of Research Excellence in Rural and Remote Primary Health Care (CREPRHC) is one of eight Centres of Research Excellence (CRE) funded by the Australian Department of Health and Ageing through the Australian Primary Health Care Research Institute (see <http://aphrci.unsw.edu.au/research-program/centres-of-research-excellence/>)

This CREPRHC is a collaboration between Monash University Department of Rural Health in Bendigo and Geelong, the Flinders University and Charles Darwin University Centres for Remote Health in Alice Springs, and the University of Sydney Department of Rural Health in Broken Hill. Its research program focuses on how to provide equitable primary health services to residents throughout rural and remote Australia. Specifically it aims to:

- better understand health behaviour relating to primary health care service utilisation in rural and remote Australia;
- develop better measures of access to guide resource allocation relating to primary health care in small rural and remote communities;
- develop a comprehensive framework for evaluating the impact of rural and remote primary health care services on access and equity of health outcomes; and

- evaluate effective evidence-based models of sustainable primary health care for different rural and remote contexts

In addition, the CREPRHC has developed a very robust research capacity building program which encompasses Pre- and Post-Doctoral training, and also includes the engagement of health service practitioners on a wide variety of research projects relevant to the above.

A key goal of the CREPRHC is to generate evidence relevant to priority rural and remote primary health care (PHC) policy issues. To this end, staff have already engaged with policy-makers from Commonwealth, State and Territory governments, peak rural health workforce organisations, and regional and local health authorities.

Now almost half way through its program, the CREPRHC has already demonstrated its indispensable role in generating new evidence, translating its research into the policy and practice arena, and working collaboratively with policy-makers, health service personnel, practitioners and consumers to evaluate and monitor the equitable provision of health care in rural and remote areas.

Working closely with a National Advisory Committee, the CREPRHC has published more than 20 peer-reviewed publications, made more than 25 keynote presentations and submissions to government, and produced policy-makers, practitioners and the research team have awarded several competitive research grants and been invited as a number of Advisory, Reference and Working Groups of major national health workforces, funding and practice organisations. Its dedicated Website (<http://www.creprhc.org.au/>) has become an important portal for researchers and interested stakeholders to link with the activities of the CRE.

This newsletter is the first of a regular series designed to provide relevant information, up-to-date information, and from which they can

identify areas of mutual interest for engaging collaboratively in research and policy-making

If you would like further information or to contribute to the newsletter, please contact Lisa Lavey on 03 5440 9677 or email lisa.lavey@monash.edu.

These newsletters will also be available on our CREPRHC website.

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Centre of Research Excellence
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Newsletter of the

Centre of Research Excellence in Rural and Remote Primary Health Care

Issue 3: June 2013

Editorial

David Lyle

Debate about rural disadvantage has been part of public discourse in Australia for many years. Much has been written about the poorer health of rural Australians, and the contribution of a number of available factors including inadequate access to healthcare and other socially mediated factors such as access to food, housing, income, and education. Despite a heightened political awareness of these issues since the early 1990s, progress towards achieving equity of access and outcomes in healthcare has been slow and difficult. The reality for many rural and remote communities is that they continue to experience difficulties in attracting and retaining an appropriate and adequately trained health and medical workforce. This situation is further exacerbated by the fact that health agencies and funding have been focused on the delivery of treatment and curative services while many of the upstream determinants of ill health, rural and remote health remain inadequately addressed.

However the needs are not all bad. While many rural and remote communities are unlikely to be afforded the same level of access to the wide range of medical and health services available to residents in metropolitan centres this should not be major concern so long as rural and remote Australians have adequate access to appropriate quality primary health care services. Through the work of the CREPRPHC we are several steps closer to achieving this goal.

In a previous newsletter we reported on the development of a framework that defined the different elements of primary health care – services that might benefit rural and remote communities. Now I am pleased to report that this work has just been published in BMC Health Services Research (see reference Carey et al. on page 4). This important contribution is now be available to a wide audience and will provide great assistance to health professionals, service managers and policy makers who are responsible for formulating services required by any community. The emphasis is on practical, evidence-based approaches that are socially acceptable and accessible to all individuals and families in a given community.

Experience tells us that no one service configuration is capable of meeting the health needs of each and every rural or remote community. Developing an effective, sustainable primary health care service needs to take account of the specific geographical, social, economic, and cultural settings that defines the diversity of rural and remote communities and regions dispersed across more than 7.5 million square kilometres – home to more than seven million Australians. In this edition of the Newsletter, we highlight the work of Dr Susan Thomas who takes on the difficult challenge to establish an unambiguous and agreed position about what primary health care services rural and remote communities should expect to be delivered on the ground, and what support functions are necessary to ensure their sustainability. Susan has recruited a group of experts – clinicians, policy makers, academics and consumers to develop a consensus about what the essential primary health care services are for all Australians. She has also tasked them to define what specific services should be available in each rural and remote community based on their individual settings.

Other reports on page 3, provide an update on the development of the CREPRPHC Index of Access, which was featured in the Mason Review of Australian Government Health Workforce Programs, and highlight new work Melissa Linderman is doing with the West Australian Centre for Health and Ageing on addressing the support needs of carers in remote Indigenous communities.

In this edition we also introduce some of our associate investigators and two of our fantastic novice researchers, Fiona Tipping from Mildura and Susan Dally from Broken Hill.

Professor David Lyle



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Issue 2: February 2013



University of Sydney

Editorial



John Humphreys

The two centimetre bold headline on page 3 of *The Age* on 3 January 2013 was "Longer wait, further travel for health services". As a Chief Investigator of a Centre of Research Excellence focussing on overcoming access barriers in rural and remote areas for Australians living in rural and remote areas, I read on with interest. Alas, the main focus of this article was on the impact of changes to the Medical Benefits Schedule that would force out-of-suburban Victorians to travel further and wait longer for specialist medical services.

Without wishing to diminish the importance of access to services in other metropolitan areas, I pondered how residents of the many small rural and remote communities dispersed across Australia's 7.5 million square kilometres would react as they struggle on a daily basis to access appropriate primary health care, let alone specialist care. And such communities struggle to attract and retain the spectrum of health care workers required to service the needs of their populations, so visiting services, such as the Royal Flying Doctor Service (RFDS) and use of telehealth, are critical in delivering locally available care.

Access is much more than just geographical proximity to services. Access involves the availability of services, their proximity, their affordability, their appropriateness, and the ease with which they can be used at times of need. While the importance of these components varies according to different geographical locations, to the improvement of this pattern of variation has been undertaken in Australia. Staff from the Centre of Research Excellence in Rural and Remote Primary Health Care (CREPHHC) have just surveyed five small rural communities in order to better understand how access impacts upon residents' patterns of utilisation of health services. On page 3 of this newsletter, Greg Post-doctoral researcher Bernadette Ward discusses some preliminary findings.

Equally important to understanding how access to health care impacts upon the lives of rural and remote Australians is the issue of what primary health care services should be available. CREPHHC staff in Alice Springs are leading a major study on how best to provide core primary health care services. On page 4, Associate Professor Tim Carty outlines the extensive systematic review that has been undertaken to gather international evidence on core PHC services. In addition, a Delphi investigation is being conducted with leading rural health stakeholders in Australia.

Concurrently, staff from the Broken Hill node of the Centre of Research Excellence are using the RFDS to show how sustainable, high quality, accessible primary health care can be delivered across sparsely settled regions. Further details on this research led by Professor David Lyle are available on Page 3.

The findings of this research on access to health services will provide the basis for work being undertaken by Matthew McCall in developing a National Index of Access that can be used by policy-makers and the authorities in the planning of appropriate primary health care services for all non-metropolitan Australians. Working closely with staff from the Australian Government Department of Health and Ageing, Matthew and I have been working to produce a better index of access as the basis for resource distribution that might overcome shortcomings associated with the existing classification.

In short, the CREPHHC is leading cutting-edge research in Australia to better understand the importance of access to primary health care as the basis for informing policies and the measures that are required to ensure equitable health outcomes for all Australians living in rural and remote areas.

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Newsletter of the Centre of Research Excellence in Rural and Remote Primary Health Care

Issue 4: October 2013

Editorial

John Humphreys

On 7 September 2013, Australians voted for a change in government, and arguably with some changes in the macro policies that determine who gets what in our society. Unfortunately, changing governments does not necessarily remove the national fiscal constraints that limit the scope to bring about more health care services. In short, the size of the pie has not changed – the only option is to hope for a bigger slice!

So what will this mean for the health of rural and remote Australians?

The 1976 Hospitals and Health Commission Report identified the need for more integrated health services, and addressing workforce shortages, inadequate transport and indigenous health as the key issues. Today, despite numerous government health policies and programs, the same four factors continue to impede improvements to the health status of rural and remote Australians.

Undoubtedly, the overarching issue remains how to ensure equitable access to appropriate health services at times of need. Considerable rural health research has been undertaken spanning wide-ranging solutions, many of which endorse rural health organisations' calls for more rural health funding. In response, Commonwealth,

State and Territory governments of all political persuasion have introduced specific rural health policies and programs, often, however, without any rigorous evaluation of their effectiveness.

Currently, the *Centre of Research Excellence in Rural and Remote Primary Health Care (CRERRPHC)* is undertaking landmark research examining how these persistent inequities can be overcome without more funding, and developing a framework for evaluating how well policies and programs meet the goal of improving access to primary health care and thereby improving rural health status. This research focuses on three key aspects of primary health care:

- Developing an 'Index of access' based on the need for, and availability of, first-line health care services – this provides an evidence-based classification to guide the distribution of scarce resources;

- Identifying what primary health care services should be available, and how best to provide them – benchmarking, i.e. primary health care services, and which ones should be provided 'in situ' or by alternative modalities in different size communities; and

- Demonstrating which service models are most effective in delivering comprehensive primary health care – an evidence based evaluation framework critical for monitoring program effectiveness.

Improving equity of access to health care does not necessarily require, and may not even result from, more resources. Rather it requires the optimal allocation of existing resources to reflect geographic and socio-demographic differences in the patterns of need.

The evidence generated by CRERRPHC research is already helping to guide policies and resource allocation to better target those most in need. Moreover, this research will assist policy-

makers to adopt a more systematic approach to rural and remote health care planning.

Paralleling this important research, the CRERRPHC has developed a strong focus on knowledge exchange and engaging rural health stakeholders in its research. This extensive collaborative activity will help to ensure that evidence (rather than politics) underpins future rural health policies, resource allocation and the planning of health services.

This newsletter illustrates some of the research, knowledge exchange and capacity building activities being undertaken by the CRERRPHC.

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